

REVISIONAL NOTES ON AFRICAN  
*CHARAXES*  
(LEPIDOPTERA : NYMPHALIDAE)  
PART IX



BY  
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*Pp 415-487; 18 Plates, 9 Text-figures*

BULLETIN OF  
THE BRITISH MUSEUM (NATURAL HISTORY)  
ENTOMOLOGY Vol. 29 No. 8  
LONDON : 1974

THE BULLETIN OF THE BRITISH MUSEUM  
(NATURAL HISTORY), *instituted in 1949, is  
issued in five series corresponding to the Departments  
of the Museum, and an Historical series.*

*Parts will appear at irregular intervals as they  
become ready. Volumes will contain about three or  
four hundred pages, and will not necessarily be  
completed within one calendar year.*

*In 1965 a separate supplementary series of longer  
papers was instituted, numbered serially for each  
Department.*

*This paper is Vol. 29 No. 8 of the Entomological  
series. The abbreviated titles of periodicals cited  
follow those of the World List of Scientific Periodicals.*

*World List abbreviation  
Bull. Br. Mus. nat. Hist. (Ent.)*

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TRUSTEES OF  
THE BRITISH MUSEUM (NATURAL HISTORY)

*Issued 8 February, 1974*

*Price £9.95*

# REVISIONAL NOTES ON AFRICAN CHARAXES (LEPIDOPTERA : NYMPHALIDAE)

## PART IX

By V. G. L. VAN SOMEREN

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### SYNOPSIS

The above species listed in the Contents and their subspecies are dealt with. Three new subspecies and a new form are described.

I. *CHARAXES JAHLUSA* TRIMEN AND ITS SUBSPECIES*Charaxes jahlusa* Trimen

THIS is a widespread species, extending from the Cape, up the east coast of Africa to southern Ethiopia. It has been divided into some four races which can be upheld but, as with many other bushveldt species, one race may merge with the next if suitable environment connects the two main habitats. Such intergrades do not, in my opinion, invalidate the status (as good races) of the two extremes, each aggregate remaining true to type within its main habitats.

A study of a vegetational map of Africa, such as that produced by UNESCO, 1959, shows that bushveldt or acacia savannah stretches the whole way from the Cape to southern Ethiopia, in a varying degree. It must be recognized, however, that there is a change in ecological conditions, such as temperature and humidity, as one approaches the Equator, and the effect of the two monsoons, producing the two 'rainy seasons' in eastern Africa, cannot be ignored.

*Charaxes jahlusa jahlusa* Trimen

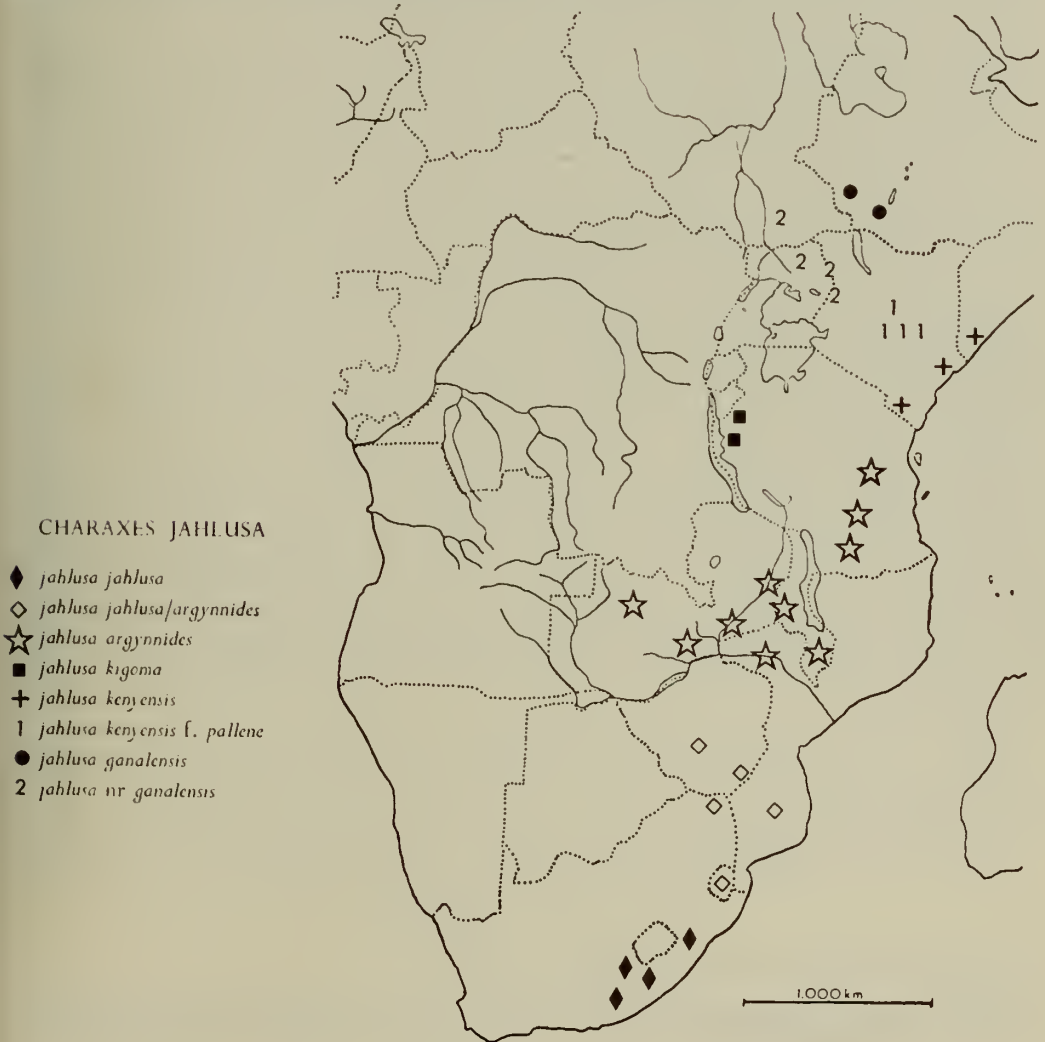
(Pl. 1, figs 1-5, Map 1)

*Charaxes jahlusa* Trimen, 1862 : 177, n. 102.

MALE. Fore wing length 23-27 mm. In shape, costa only slightly curved, but apex produced, enhanced by the strong concavity on the outer margin of the wing in region 3-5 and the prominent hind angle in 1a-1b. *Upperside*. Ground colour of both wings buffish orange, shading to buff on the inner fold of the hind wing. Pattern of black spots bold, arranged as follows: a small black dot at base of cell, followed by a linear mark at about mid point, and a larger L-shaped mark at its end; two rounded spots in the sub-bases of 1b & 2, a series of more linear black marks in the discal line, that in 1b round; the border of the wing, including the apex brownish black, carrying a series of pale orange spots, that in 6 large and sometimes whitish; margin with a series of orange linear marks, becoming larger and more rounded toward the hind angle, these marks may sometimes dominate the border, leaving only a narrow chain of conjoined black lunules proximally (cf. female). Hind wing, upper margin paler than the rest of the wing, with a large, somewhat quadrate black spot in the subcosta and below this a smaller spot, sometimes double, at the end of the cell; the cell may have a pale rounded spot in the middle; the border of the wing with a series of black spots with orange enclosed distally abutting on to the orange margin; edge of wing black. Some specimens show a series of faintly indicated black lunules on proximal side of the row of dark submarginal spots. *Underside*. More strongly patterned than the upper; fore wing ground colour greenish grey along the base of the costa and beyond the cell, shading into the delicate pinkish buff of the rest of the wing. A black spot on the base of the costa; black spot in the disc of the wing slightly smaller than upperside, but showing up strongly on the paler ground. The submarginal dark line showing up well, with an extension to the margin in 5 and less strongly at ends of veins 1-3, the dark line distally edged with whitish from 3 to apex, the marginal spots at the hind angle buffish pink; the border above to apex greenish grey with faintly indicated buffish marks on the margin. The whitish mark at the base of the subapex is satiny. Hind wing, ground colour satiny, base of wing with a brownish grey patch with irregular distal edge, margined in black, broken by a strong satiny white spot at base of 8, followed by three smaller spots in sub-bases of 2 and the cell. The inner fold with two black spots; the border of the wing with an intricate pattern of buffish lunules, separated from the submarginal buffish ovoid spots by a zone of greenish grey, ending at the anal angle with two spots on a

greenish ground; the edge slightly ochreous with blackish line distally. There are two black spots on the inner fold and black lunules in the subapex of 1b & 2. The two sharply pointed tails, 3 & 2 mm in length on veins 2 and 4, are orange on the upper side, blackish below.

FEMALE. Both wings differ in shape from that of the male, the fore wing is less falcate and the hind wing more rounded, less pointed at the anal angle. *Upperside*. The colour of both wings is paler tawny orange; the dark spotting of the fore wing, arranged as in the male, is thus more clearly defined; the marginal orange more extended and reducing the width of the submarginal dark spots to lunules. On the hind wing the basal black spots are not so strong, but the row of black spots, with orange distally, is more clearly defined, and the orange border wider; the edge black. The tails are better developed and of about equal length, 4-5 mm. *Underside*. Fore wing paler than in male, the pinkish area less strong. The dark spotting corresponds to that of the upper side. The hind wing ground colour paler than in male, the basal and submarginal marks as in male but less strong; the submarginal border wider, but the whitish spots and the discal zone satiny.



MAP I.

RANGE. Cape Colony of South Africa, mainly in the eastern areas, extending toward Natal in a transitional form which is unstable. These intermediate forms also occur in southern Mozambique and the southern part of Rhodesia, where they tend more strongly toward *argynnides* (Pl. 1, figs 4 & 5).

*Charaxes jahlusa argynnides* Westwood

(Pl. 1, figs 6-9, Map 1)

*Charaxes argynnides* Westwood, 1864 : 10.

MALE. Fore wing length 25-27 mm; shape as in nominate race. *Upperside*. Fore wing, ground colour very similar to nominate *jahlusa*, though slightly variable as to depth of orange colour. Black spots in median and submedian areas, including the subcostal and cell, slightly smaller, but the marginal black border stronger, with a reduction in the size of the marginal orange spots; the spot in the subapex not pale but the same colour as the ground, this also applies to the orange spot in the subcosta. Hind wing ground colour as fore wing, the costal black spot smaller, often divided into two dots; the black spot at the apex of the cell small, or lacking. The marginal black border narrower, with a reduction of the dark zone on the proximal side; the admarginal orange spots smaller and the black edge narrower. Tails as in nominate race. *Underside*. Fore wing, pinkish buff area darker. The black spots as on the upper side; the silvery subapical costal mark strong, though smaller than in the nominate race; the submarginal dark zone wider, and the silvery mark in the apex and 'bay' of wing less well marked, more greyish. On the hind wing the basal dark patch is darker, more brownish, the silvery costal spot and those on the distal side of the patch, though smaller, are strongly outlined in black. The border is broader and duskier, the large silvery spot at the upper angle is missing or only slightly indicated; the submarginal row of lunules are darker, with dark lines proximally, directed toward the silvery bar; the admarginal row of whitish, black-edged lunules are strong, especially in the region of the tails. Edge of wing orange or dusky orange.

FEMALE. Fore wing length 30-32 mm. Shape, apex of fore wing less falcate than in male, thus more rounded, hind wing also more rounded. *Upperside*. Fore wing, ground colour paler, as a rule, than in the nominate race, the black spots of about the same size or reduced; marginal black lunules strong, though often reduced in size. Hind wing ground colour as in fore wing, the discal dark spots reduced in size; the submarginal lunules with pale spots distally lightly narrower though well marked. *Underside*. Compared with the nominate race, ground colour paler; the dark area at base of wing less strong, more chocolate-brown, but the white spots within and on the margin, though smaller, are distinct; the postdiscal zone is pale chocolate-brown; the submarginal row of dark spots less broken up; the white marginal lunules, outlined in black, more distinct. Tails longer than in the male, very thin, 5 & 4 mm long.

RANGE. The region of the Zambesi River; the northern parts of Rhodesia, adjoining Mozambique, Zambia, Malawi and southern Tanzania.

*Charaxes jahlusa kenyensis* Joicey & Talbot

(Pl. 1, figs 10-16; Map 1)

*Charaxes jahlusa kenyensis* Joicey & Talbot, 1925 : 646.

There are two ecological forms, that of the Kenya Coast littoral, and that of the dry savannah area around Kibwezi.

Nominate *kenyensis*

**MALE.** Fore wing length 28–30 mm. Shape as in nominate *jahlusa*, or even more falcate. *Upperside* fore wing, ground colour rich rufous orange; black spots as in the nominate race, but subcostal ones more developed; black border, including the apex, blacker, with a reduction in size of the subapical orange spot and of the marginal orange spots. Hind wing, ground colour as fore wing, costal black spot, though reduced in size, often strong. The dark patch of the underside shows through slightly; the black border narrower than in nominate *jahlusa*, but denser, the orange lunules well marked only in the region of the tails; the orange border narrow from vein 5 to anal angle, which is greenish. Tails rather short, upper 3 mm, lower 5 mm, with base conjoined to the upper side of anal angle. *Underside.* Ground colour at base and disc of wing strongly pink, shading to more greyish in cell, subcosta and beyond to apex. Pattern of black spots as above; a slightly quadrate silvery spot at end of cell and similar silvery ones in sub-bases 5–7, with some silvery shading distal to the black spots in 2–3; apex with two elongate ovoid silvery marks. Submargin with a double row of blackish marks, the inner linear, from which blackish linear marks in interspaces are directed inward, most marked in the apex, the outer row more angled and enclosing pink to whitish marks. The marginal spots pinkish, most marked at the tornus, divided by greyish; edge finely white. Hind wing, basal dark areas reduced and rather broken up but strong and clearcut, the silvery subcostal spot large, those in the cell also clear; the postdiscal zone and the inner fold silvery, crossed by dark lines along the veins and interspaces; lower part of fold with two black lunules, above the hind angle. The border is dark but has the same intricate pattern of black-edged lunules with brownish centres and white-centered admarginal lunules as noted in the nominate race; the dark border interrupted by a large silvery patch at base of upper tail, with smaller spots at upper angle; the outer row of marks with narrow greenish surround most marked at the anal angle; the edges light brownish to greyish.

**FEMALE.** Fore wing length 32–35 mm. *Upperside.* Ground colour of both wings tawny orange, the pattern of black spots as in the male but more developed, those along the subcosta strong, the interspaces toward the apex, paler orange-tawny; the border is blackish, more solid at the apex, the conjoined lunules with strongly marked orange marginal spots. Hind wing ground colour rufous orange, slightly paler in the disc, the dark patch of underside showing through slightly and the discal dark spots, though small, are clear; the paler line beyond shades into the darker orange, which carries a faint indication of darker lunules; the conjoined submarginal lunules, with orange distally, are well defined; the margin orange, with narrow dark edge. Tails moderately long, 5 & 4 mm, orange with black borders. *Underside.* Fore wing ground colour as in the male, black and silvery marks similarly arranged but marginal border wider, though not so defined, and enclosing ochreous triangles outlined distally in black, more solidly black at the hind angle; border beyond greyish to pinkish at the hind angle. Hind wing basal area as in the male, the silvery band beyond narrower, but the submarginal zone broader, with the double row of marginal lunules better developed. The silvery triangle above the anal angle almost discrete and well marked.

**RANGE.** Kenya and adjoining Tanzania, along the coast littoral to the Somali border; extending inland to the Voi area and the Teita Range.

The nominate form of this subspecies is replaced in the drier savannah country by a small ecological variant, whose males differ from the nominate coastal race *kenyensis* by being much smaller, and with an equally small and very pale female.

Form *pallene*, forma n.

(Pl. 1, figs 12–15, Map 1)

**MALE.** Fore wing length 23–25 mm, thus about the size of nominate *jahlusa*. Shape as in the nominate race, sometimes less falcate. *Upperside.* Ground colour duller, more tawny

than *kenyensis*, the black spots bolder, those of the subcosta tending to be confluent; the apical and black of the border heavy; the subapical tawny spots reduced in size, the marginal ones small except at the hind margin. Hind wing ground colour as fore wing, costal area paler, the costal black mark strong, and the underside dark patch showing through slightly. The hind wing border of black and orange spots narrow, but the marginal orange border well marked. The tails are very short, 2 & 3 mm. *Underside*, generally duller, the pinkish area more buffish and restricted to the hind margin of the fore wing. The black spots much as on the upperside but the apical and subapical pale marks more confluent, the submarginal border strong. On the hind wing the basal dark patch is more solid and darker than in *kenyensis*, but the contained white spots are distinct. The pale zone is more defined on the proximal side and is rayed with black, as also is the inner fold, which has double black lunules above the white triangle above the anal angle. There are two strong black spots on the inner side of the fold. The border is of the same complicated pattern noted in other races.

**FEMALE.** It is this sex which exhibits the greatest difference from that of other races. Fore wing length 25–28 mm. *Upperside*. Ground colour of both wings dull ochre, the black spots on the fore wing bolder and well developed; the marginal black loops bolder; the two paler marks in the subapex and costa extend into cellule 3. The marginal spots paler. Hind wing, ground colour has a faint trace of the dark basal marks of underside; the costal spot at end of cell as in *kenyensis*, as also are the marginal series of black and ochreous spots. Tails comparatively short, 3 & 4 mm. *Underside*. Fore wing ground colour ochreous, without the usual characteristic pinkish in the lower half of the wing; this area is buff, shading to greyish on the costa and margin. The black spots are strongly developed; hind wing dark basal area, though not very dark, is well defined, the contained costal spot is only slightly silvery, those on the edge of the patch are whitish, not silvery, and are bordered by a zone of brownish adjacent to the intricate patterned marginal border; this zone, as well as the inner fold, crossed by dark lines on and between the veins; the mark above the anal angle is slightly silvery.

Holotype male. KENYA: Kibwezi (Kibezi), W.F., iii. 1932 (*van Someren*).

Allotype female. KENYA: Kibwezi, W. F., iii. 1930 (*van Someren*).

Holotype, allotype and paratypes in BMNH.

**RANGE.** The dry thorn-bush country around Kibwezi and Ukambani and upper Tana River, and Northern Uasso-Nyiro River.

### *Charaxes jahluca* near *ganalensis* Carpenter

(Pl. 1, fig 16; Map 1)

**MALE.** *Upperside*. Carpenter (1937 : 64) describes the male of ssp. *ganalensis* as 'very like that of *kenyensis* in the black markings of the apical part of the fore wing and in ground colour, but the apical black is not so pronounced. . . .' In the specimens from Suk and Karamoja, Uganda, the apical black is strong and continuous with the black border, the subapical spots are small, the marginal spots are obscured. On the hind wing, the dark basal area of underside shows through and the spot on the costa is strong. The marginal border is narrow and the admarginal linear marks obscured, the edge only slightly orange. *Underside*. Carpenter states 'on the *undersurface* the general effect is much more uniform than in other races, with the different elements of the pattern less strongly contrasted'. In the Suk examples before me, the pattern is strong; on the forewing the pink area occupies the whole of the hind half of the wing, shading into greenish grey at the costa, and greyish toward the apex; the silvery white streaks with black spots at base in the subapex are strong, and the two in the submarginal line equally strong; the darker border has orange linear marks outlined in black; the margin with greyish ground has orange spots, strong at the hind angle. On the hind



wing the basal dark patch is blackish grey, greenish grey at the costa, which has three black dots; the subcostal silvery white oval spot is strong as is also the silvery bar distal to the patch and goes through to the inner fold; this is followed by a greyish zone divided up by blackish lines along and between the veins arising from black bases with orange distally, forming part of the intricate border which is interrupted opposite the upper tail by a greenish grey patch; the margin is usually brownish but in some specimens is also greenish grey.

The Suk-Karamoja examples do not conform to the description of *ganalensis*, of which, unfortunately, I cannot obtain specimens.

RANGE. Kenya-Uganda border in the Suk and Karamoja country west of Lake Rudolf, which is dry savannah country, mostly thornbush.

### *Charaxes jahlusa ganalensis* Carpenter

*Charaxes jahlusa ganalensis* Carpenter, 1937 : 64.

No specimens available.

### *Charaxes jahlusa kigoma* subsp. n.

(Pls 1 & 2, figs 17-20)

*Charaxes jahlusa argynnides* Westwood; Carcasson, 1966 : 21.

A series of three males were taken in the Mukuyu district of the Kigoma area by the Japanese Primate Expedition to N.W. Tanzania. Additional material, including females, was collected by Major Grahame's African collector, in the same area; they differ considerably from *argynnides* of the Zambesi area. This race is larger than any other and is the most decorative.

MALE. Fore wing length 38-40 mm. *Upperside*. Ground colour a rich rufous orange, darkening slightly toward the base and along the costa; the black spots in the cell at distal end strong, the two often confluent; the spots at the sub-bases 1b-2 small, those in the discal line larger, but still smaller than in other races, the apical portion and the border of the wing almost uniformly black, but the orange spots in the subapex present, though small; the marginal orange spots almost obliterated except those at hind angle. The hind wing colour equally rich tawny orange, very slightly paler along the costa, where the costal black spot is relatively small; the border black with a few orange spots in the admarginal in the region of the tails; the admarginal orange but not extending up to the upper angle. Tails rather short, 2 & 3 mm in length, mostly black. *Underside*. Fore wing, base and the greater part rich tawny orange, more greyish along the costa, which has a greenish tinge; the apex of the wing with a brownish sub-basal bar with an extension to the margin and continued down the submargin, which is greyish in the 'bay' of the wing; the silvery streaks in the subapex and those beyond strong, the latter with greyish rays to the margin. The border strong, the latter with greyish rays to the margin. The border of the wing blackish toward the hind angle, which carries an orange double spot in 1b. Hind wing costa olive-greyish at base; dark greyish basal patch strong, extending to inner fold to two black spots; silvery subcostal spot well marked, that in cell also very distinct; outer side of patch bordered by an irregular silvery bar ending above the anal angle white triangle, with two black dots above, this zone merging with the more brownish submarginal zone, both crossed by black veins and shorter black lines interneurally; border dark, with a silvery spot in upper angle, followed by smaller orange spots and lunules

outlined in black; the margin with paler spots also outlined in black, with some greyish green around; edge brownish orange.

**FEMALE.** Fore wing, length 34–36 mm, less falcate than the male, hind wing more rounded. *Upperside.* Fore wing, ground colour rich tawny orange; subcostal black spots large, as also are those in the sub-bases of 1b & 2 and those in the discal line. The dark marks in the subapex sagittate, with bases on the four orange spots in subapex; apex and border of wing brownish black, the orange marginal linear marks small, except the double spot in 1b. Hind wing ground colour tawny orange, slightly paler along the costa; the dark patch of underside showing through slightly; the costal black spot small. The submarginal lunules hardly visible; the black border with orange spots strong; marginal line orange, edge black; tails rather short, 3 & 4 mm in length, orange with black edges. *Underside.* Fore wing, ground colour mainly a rich tawny orange, this colour extending from the hind border to end of cell and vein 4, gradually shading into the olive-grey of the base of the costa and the ochreous grey of the rest of the wing, with an extension to the margin in vein 5. Costa with a black spot in sub-base, remaining black spots as above and equally strong; the ochreous bar at the sub-bases of 5–7 moderately well marked, those in subapex stronger, with greyish rays extending to the margin; the dark submarginal line weak except toward the hind angle, where the marginal spots are orange; edge black. Hind wing, basal patch tawny brown, the black spots at costa and black line on outer border well marked, as also are the silvery white subcostal mark and that in the cell; the silvery bar on distal side strong, connecting at its end with the silvery triangular mark above the anal angle; inner border of fold with two black spots and a black line above the silvery triangle; on the distal side of the silvery bar is a buffish brown zone and both are crossed by black veins and interneural lines which extend from a series of black-bordered orange triangles, the spot in 7 is large and silvery white; the border is ornamented with a series of black-ringed, silvery marks, most developed at the upper angle; the margin of the wing is orange, whitish at upper angle; edge black, the anal angle slightly olive. Tails orange with black edges.

Holotype ♂. TANZANIA: Kigoma, Mukuyu, x. 1964.

Allotype ♀. TANZANIA: Kigoma, x. 1964.

Both in the collection of Major Iain Grahame, to be deposited in the BMNH.

Paratypes in Coll. Grahame.

RANGE. At present known only from the type-locality.

#### SYSTEMATIC LIST

#### *Charaxes jahlusa* Trimen

*Charaxes jahlusa jahlusa* Trimen, 1862. Type locality: Grahamstown, Bashee River, Cape, South Africa.

Range: Southern Africa, eastern Cape with a transitional form to *argynnides* in Natal, Transvaal, southern Mozambique and southern Rhodesia.

*jahlusa argynnides* Westwood, 1864. Type locality: 'Zambesi'.

Range: Zambesi River, Zambia, northern Rhodesia, Malawi, northern Mozambique, southern and eastern Tanzania.

*jahlusa kigoma* subsp. n. Type locality: Kigoma, Tanzania.

Range: District to the north-east of Lake Tanganyika in Kigoma area.

*jahlusa kenyensis* Joicey & Talbot, 1925. Type locality: Mombasa and Teita Hills.

Range: Kenya coast and hinterland to Tana River; Taveta-Kilimanjaro area.

*jahlusa kenyensis* f. *pallene* forma n. (Ecological form No. 1).

Range: Kibwezi and adjacent Ukambani.

*jahlusa kenyensis* f. transitional to *ganalensis* (Ecological form No. 2).

Range: Suk and Kamasia to Turkana.

*jahlusa ganalensis* Carpenter, 1937. Type locality: Ganal River, Sidamo, south-western Ethiopia

Range: south-western Ethiopia.

2. *CHARAXES PAPHIANUS* WARD AND *CH. PLEIONE* GODART  
AND THEIR SUBSPECIES

*Charaxes paphianus* Ward

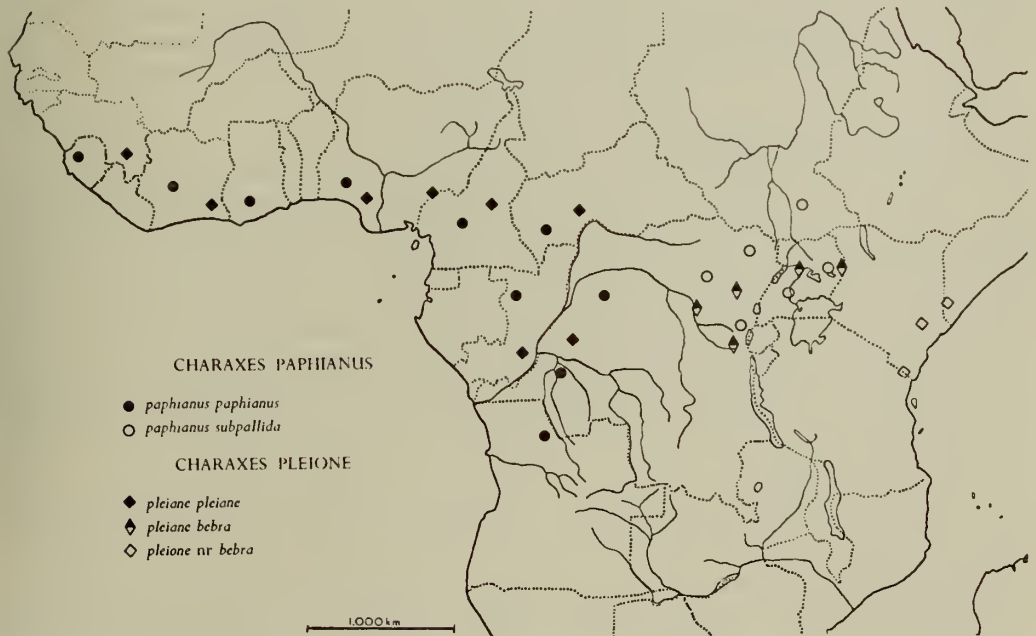
(Pl. 2, figs 21-23; Map 2)

*Charaxes paphianus* Ward, 1871 : 120.

*Philognoma falcata* Butler, 1872 : 101. Gold Coast, Ashanti.

*Palla hamulosa* Weymer, 1892 : 95. Female, Gold Coast.

MALE. Fore wing length 28-30 mm. Fore wing, shape, costa curved, outer margin incised in 4-5 so that the apex is pointed; hind angle almost rectangular. *Upperside*. Fore wing, ground colour tawny orange; pattern very limited, a thin double line at end of cell,



MAP 2.

a larger mark crossing sub-bases of 6-5, usually free or slightly joined along the costa to a similar mark in postdiscal line which joins up with the black apex, the black extending down the outer margin to upper edge of 1b; there are sometimes small obscured dark spots in the postdiscal row in 5-4, and more distinct spots in the submarginal line in 4-2. Hind wing ground colour tawny orange, slightly paler on the inner fold, almost immaculate except for three dark marks along the costa, and a faint line in the sub-base; very obscured spots in the submargin, variable in number; margin very slightly dentate, a short robust tail at end of vein 4, 3-4 mm in length, hind angle only slightly produced. *Underside.* Fore wing, ground colour almost uniform umber-brown, slightly paler in the postdiscal zone and on outer margin, crossed by a slightly curved dark line with white on inner edge, extending from just short of the apex to the hind margin at about mid point. Hind wing ground colour as fore wing, almost uniform, but divided by a dark line, continuous with the line on the fore wing, which crosses the wing from mid-costa to just above the anal angle; faint dark marks present in the discal line, edged proximally in whitish; a few obscure dark spots in the submarginal line, in region of the tail, may be present.

*FEMALE.* Larger than the male, fore wing length 31-34 mm; shape similar to that of male. *Upperside.* Fore wing, ground colour paler, more ochraceous orange, darkening slightly toward the base. Pattern more apparent than in the male but less dark. There are usually two dark spots in the sub-base of the cell, the marks beyond more extended, apex and margin less dark, but submarginal spots more developed. Hind wing ground colour as fore wing, shading to buffish on the inner fold; spots on costa larger, with a slight indication of a faint line through disc; submarginal series of dark ovoid rings enclosing pale ochreous spots, stronger at upper angle; margin brownish, extending to the tail on vein 4, 4-5 mm in length. *Underside.* Fore wing, ground colour much paler than in the male, with faint pattern corresponding to the darker marks of upperside; the conspicuous dark line brownish. Hind wing ground colour as in fore wing, with the dark line crossing the wing and continuous with the line of the fore wing. Border with faint pattern corresponding to that of upperside.

*RANGE.* Sierra Leone to Cameroun, Angola and upper Congo.

### *Charaxes paphianus subpallida* Joicey & Talbot

(Pl. 2, figs 24-29; Map 2)

*Charaxes paphianus subpallida* Joicey & Talbot, 1925 : 645.

*MALE.* Fore wing length 28-30 mm. Compared with the nominate race, shape much as in that race, apex slightly more pointed. *Upperside.* Fore wing, ground colour slightly paler, dark marks and margin less strong. Hind wing, ground colour as in fore wing, the costal marks very similar to nominate *paphianus*. Tail longer and thinner, 5 mm. *Underside.* Fore wing, ground colour generally paler than in nominate race, but this character is by no means constant; nevertheless, the basal areas of both wings on the proximal side of the dark line paler than the ground on the distal side of the line, which has a series of dark, though rather obscure, spots on the submarginal line. Similar remarks apply to the hind wing. A not uncommon variation amongst the males is noted, in which the ground colour is paler, the costal marks on the fore wing, apex and margin are reduced. The hind wing is almost immaculate, even to the usual costal marks at the apex. The underside is generally paler and overall size is smaller. (Pl. 2, figs 24-29).

*FEMALE.* Larger than the male, fore wing length 31 mm; shape similar. Ground colour paler, more ochreous. Hind wing buffish on inner fold. Pattern very similar to that of nominate females. *Underside.* Very similar to nominate *paphianus* but slightly paler.

*RANGE.* Eastern Congo to Uganda and north-western Kenya, southern Sudan.

*BIOLOGICAL NOTE.* *Vide* van Someren, 1926 : 346. Food plant *Acacia pennata* et al. (Mimosaceae).

*Charaxes pleione* (Godart)

(Pl. 2, figs 30-35, Map 2)

*Nymphalis pleione* Godart, 1824 : 366.*Philognoma lichas* Doubleday, 1849 : pl. 49, f. 3.Form *othello* Suffert, 1904 : 123.Form *pallida* Lathy, 1925 : 95.

**MALE.** Fore wing length 28-30 mm; shape, costa slightly curved, outer margin only slightly incurved at vein 4; hind angle projecting and almost rectangular; hind wing margin slightly dentate, single tail at end of vein 4 very short, 2-3 mm in length. *Upperside.* Fore wing, ground colour rich tawny orange in basal third, rest of wing brownish black or black, but the tawny orange and the black area in the region of the cell and beyond join up with the tawny orange spots in the sub-bases of 6-5 and even with the spot in the subapex. The marginal black border usually extends to the hind angle, where it encloses an orange spot, or it may narrow to the hind angle. The small black line at the end of the cell may be free, or it may join up with the apical black. Hind wing ground colour as fore wing, slightly paler on the inner fold. Pattern limited to some black ringlets at the outer end of the costa and upper angle, extending down the outer margin in lessening degree, the rings enclosing ochreous spots; edge of wing blackish. Outer margin dentate, with a short stumpy tail at end of vein 4. Anal angle slightly projecting. *Underside.* Rather variable; fore wing ground colour tawny orange to ochreous orange, with an intricate pattern of dark blackish narrow lines; cell crossed by two fine curved lines in sub-base; an interrupted series of spots beyond and a stronger line toward the mid cell cross into sub-base of 2,; there is a further dark line at end of cell. Postdiscal zone paler and satiny, flanked on distal side by a dark line commencing at subapex and extending to mid hind margin. This dark line is continuous with the dark line on the hind wing. On its distal border are some dark patches in subapex; mid area and hind margin with a zigzag fine dark line in submarginal line; edge of wing darker brownish, with some whitish satiny marks at apex. Hind wing, ground colour as fore, with the same intricate pattern; a dark line runs along the upper border of the inner fold, joining the dark discal line at an angle above the anal angle; the discal line usually strong, extending from the costa to anal angle, sometimes with a pale streak on proximal side above the anal angle; a shorter dark line from costa forms an angle with the discal line, and in between are some ochreous spots; border beyond the line somewhat darker, carrying a series of pale ochreous angular marks in the postdiscal line, and a similar series in the submarginal zone, both distally accentuated with blackish. Border more rufous, with obscure paler lunules, strongest toward the hind angle, which is rufous outlined in silvery white; extreme edge with whitish internervular marks.

**FEMALE.** Larger than the male, fore wing length 31-33 mm; shape of fore wing less pointed at the apex, outer margin straight or slightly out-curved. Hind wing as in the male, edge more dentate. *Upperside.* Fore wing, ground colour somewhat variable, uniform pale ochreous orange to ochreous orange at base with paler ochreous beyond. Pattern variable, obscure dark lines through the cell; darker zone at sub-bases of 5-4, crossing the bases of 3-2 and sub-base of 1b, thus accentuating a series of elongate pale ochreous marks in the postdiscal zone, which extend from the costa to hind margin, distally edged with darker brownish, most distinct at hind angle in 2-1b; border of wing darker brownish from apex to hind angle. Hind wing ground colour as fore, almost uniform ochreous orange or paler in the postdiscal zone. The dark line of underside may show through. Sub-margin with a series of triangular marks, enclosing paler ochreous, these may be strongly or weakly indicated. Edge of wing with dark line slightly rufescent on edge; tail dark, short at end of vein 4, 3 mm in length. *Underside.* Equally variable in ground colour, from pale ochreous to buffish; pattern variable in strength from weak to strong, the constant feature is the dark, almost straight line which crosses the fore wing from the subapex to the hind margin and continues through the hind wing from mid costa to hind angle. Fore wing with fine dark lines through the cell, that in the subapex strongest and extending to sub-base of 1b. On the proximal side of the dark line

is a series of curved fine lines extending through sub-bases of 7-5 and 2-1b, sometimes with a mid dark streak. Distal to the dark line is a series of pointed marks enclosing pale ochreous, interrupted by dark patches in 1b and 3. Outer border with faintly indicated darker lunules; edge of wing more rufous. Hind wing with the strong dark cross-line well marked, joined at an angle by a dark line from costa to end of cell, and a faintly indicated line at upper border of inner fold. Base of wing with faintly indicated interrupted lines and on the distal border of the dark line, a series of double-pointed marks enclosing paler ochreous in the postdiscal zone; these are followed by more triangular pale spots outlined distally in brownish black and strongest at hind border; edge slightly rufescent.

RANGE. From Sierra Leone to Angola and Upper Congo, merging with the next race in the eastern Upper Congo.

### *Charaxes pleione bebra* Rothschild

(Pls 2 & 3, figs 36-42; Map 2)

*Charaxes lichas bebra* Rothschild, 1900 : 507.

MALE. Fore wing length 25-28 mm; shape similar to nominate race, but fore wing hind angle more produced and pointed. *Upperside*. Fore wing, ground colour less dark, brighter tawny orange; black areas at apex and outer border much reduced, so that the orange intrudes over the cell and into the bases of 6-3, particularly into 5-4, so that the black is limited to the apex and the outer border, but with an intrusion in cellule 3, but this black in 3 may be almost isolated, though in contact with a series of dark lunules in the submargin. The curved line towards the end of the cell is usually thinly indicated. Hind wing ground colour as fore wing, paler on the inner fold; pattern limited to a few dark ocelli with paler centres at upper angle; admarginal of wing lined in black with two silvery lines at the anal angle. *Underside*. Variable, conforming in the main to that of the nominate race.

FEMALE. Larger than the male, fore wing length 25-30 mm; shape less incised on the outer border than the males, but the hind angle well produced. The margin of the hind wing more dentate, the tail robust but short. The whole insect is more fragile looking than the male. *Upperside*. As in the nominate race, the ground colour varies from a pale ochreous orange, almost uniform, to a richer ochreous orange, and the pattern from lightly marked to moderately strong, the most pronounced feature being the submarginal rings enclosing a paler ground, especially noticeable on the hind wing. *Underside*. Essentially similar to that of the nominate race, but ground colour paler buffish to ochreous, more constant; the pattern of dark lines relatively stronger, especially the cross bars on fore and hind wings, which show up strongly; the dark patches distal to the dark line, on fore and hind wings, strong; the lines on the inner fold more marked.

This race shows a greater degree of constancy, above and below, than the nominate.

RANGE. Eastern Upper Congo to Uganda as far east as Mt Elgon. It appears again in almost identical form in the coastal districts of Kenya, on the Shimba Hills and on the lower slopes of the Usambara Range in Tanzania, where the representatives of both sexes are slightly larger, fore wing length 30-32 mm, with a richer rufescent orange underside, but pattern similar. The hind wing border slightly more dentate.

BIOLOGICAL NOTE. *Vide* van Someren, 1929. Food plant *Acacia pennata* et al. (Mimosaceae).

## SYSTEMATIC LIST

*Charaxes paphianus* Ward

*Charaxes paphianus paphianus* Ward, 1871. Type locality: Cameroun.

Range: Sierra Leone to Cameroun, Central African Republic, Republic of Congo, western Congo to Angola.

*paphianus subpallida* Joicey & Talbot, 1925. Type locality: Congo.

Range: Eastern Congo to Uganda, north-western Kenya and southern Sudan.

*Charaxes pleione* (Godart)

*Charaxes pleione pleione* (Godart), 1824. Type locality: Gold Coast.

Range: Sierra Leone to Angola and Upper Congo, Central African Republic, Republic of Congo and Congo.

*pleione bebra* Rothschild, 1900. Type locality: Beni, Eastern Congo.

Range: Eastern Upper Congo to Uganda as far as Elgon. Appearing again in slightly different form in the coastal district of Kenya on the Shimba Hills and on the lower slopes of the Usambara Range, Tanzania.

3. *CHARAXES ACRAEOIDES* DRUCE, *CH. FOURNIERAE* LE MOULT,  
*CH. NOBILIS* DRUCE AND *CH. SUPERBUS* SCHULTZE

*Charaxes acraeoides* Druce

(Pl. 3, fig. 43; Map 3)

*Charaxes acraeoides* Druce, 1908 : 449.

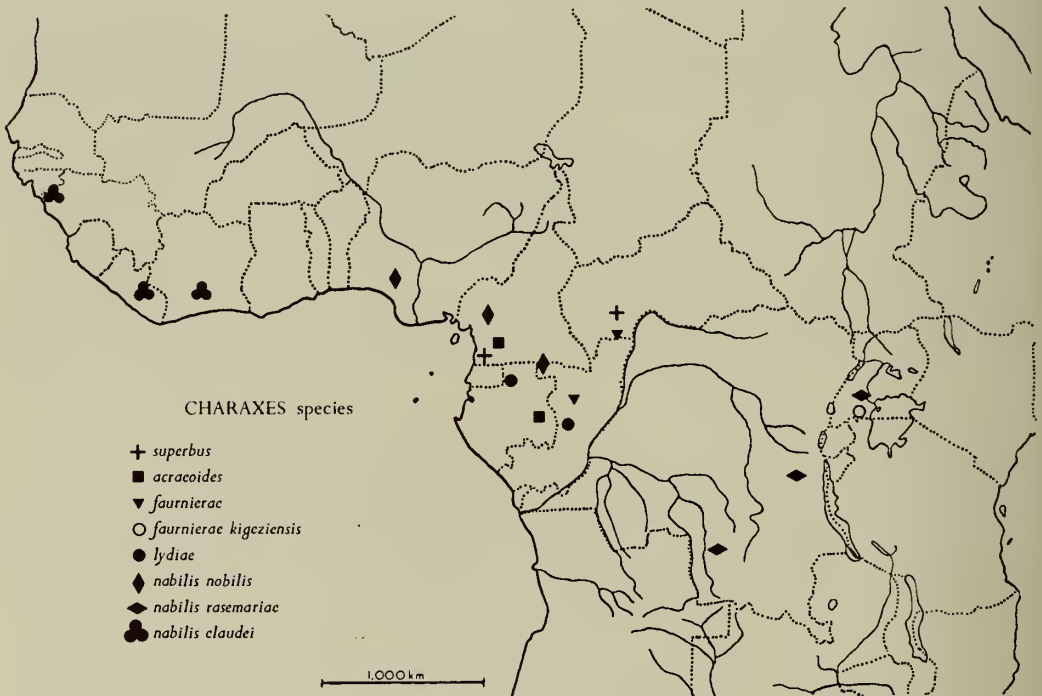
A remarkable feature of this insect is the size and width of the thorax, width 10 mm, length 16 mm. It is known only from the male sex, of which quite a number have been captured.

**MALE.** Fore wing length 50 mm; shape, apex prolonged but not pointed, the outer margin slightly concave at 3-4, but the hind angle does not project; the length of the wing at vein 1 is 35 mm. *Upperside.* Fore wing, ground colour black, the pattern in dull red. There is an obscure reddish triangle at mid cell, a larger red triangle at base of 2, and streak-like reddish marks in base of 1b in the form of a <: the discal marks are: a long streak in 1a, a large quadrate mark in 1b, the inner end of which is pointed and projecting within the basal V, the mark in 2 is smaller, somewhat triangular with distal end pointed; there are usually two obscure reddish spots distad to the large mark in 1b, in the submarginal line; the mid areas of 3-5 carry an ochreous bar, the two upper spots with straight inner ends, but pointed distally, that in 5 small and triangular, point inwards. Hind wing mainly brick-red, shading to blackish at the base but the inner fold is ochreous, black margined above the anal angle; the border of the wing

is black, with five white dots. The disc of the wing has an elongate ovoid black spot at the end of the cell. In addition some of the strong black marks of underside show through faintly. The margin of the wing is bluntly dentate with a slight indication of a 'tail' at end of vein 4, but the anal angle projects roundly and has a minute white dot in the centre. *Underside*. Fore wing cell area olive-ochreous, slightly more greenish in upper discal area, the remainder of the discal zone is dull reddish orange, fading to ochreous on the hind margin in 1a. The cell has three rounded spots at the base followed by an S mark beyond and an irregular quadrate bar at the end of the cell. The bases of 1b and 2 have black marks, while the inner part of the discal area has a strong angled mark in 1b and a curved mark in sub-base of 2. At the upper portion of the discal zone is a black bar made up of three rounded spots in 6-4, followed by longer marks in 3-2. In the submarginal line at the tornus are dumb-bell-like marks in 1b, with black streaks along the ends of veins 1, 2, & 3; the veins and interspaces above, up to the costa, strongly lined in black. The pale ochreous bar of upperside is here represented and similarly coloured. Hind wing, ground colour orange-brick-red, paler in the disc and above the anal angle which is ochreous. Strong black spots are present: an irregular black mark at extreme base with thin black lines directed toward the anal angle and on inner edge of fold; three black spots at base of cell and a larger one at its end; two rounded black spots at sub-base of 7, and two black spots basal in 6 with rounded spots below in sub-bases of 4-3. Border of wing with black rays at end of veins and black interspaces each with a white spot; the admarginal has interrupted ochreous triangles, that at anal angle with twin lilac spots.

*FEMALE*. This still appears to be unknown.

*Range*. Cameroun and the adjacent area of Republic of Congo (French Eq. Africa—Moyen Congo).



MAP 3.



*Charaxes fournierae* Le Moul't

(Pl. 3, figs 44-45, Map 3)

*Charaxes fournierae* Le Moul't, 1930 : 171, ♂.*Charaxes fournierae* Le Moul't; Le Moul't, 1933 : 17, ♀.

**MALE** Fore wing length 40 mm; fore wing slightly curved at costa, more strongly at base, apex falcate, but tip rounded, outer margin concave at 3-5, hind angle projecting but rounded. Hind wing rounded, but hind angle projecting, margin of wing slightly dentate, most marked at 2-4. *Upperside*. Fore wing from base to border deep black, with a large tawny orange patch extending from the sub-bases of 1a-2 extending distad to within 7 mm of the border in 1a, with an irregular curve in 1a-1b and the lower portion of 2. The subapex with a large more rounded tawny orange patch filling the mid areas of 3-5, less so in 6, the outer margin irregular. Hind wing mostly orange-tawny, paler on the inner fold, meeting the black outer border in a curve which is immaculate. There is a dark rounded spot in the subcosta, toward the base. *Underside*. Fore wing, ground colour tawny orange tinged with greenish in cell and along costa, where veins are black and clearly defined. Numerous black spots in discal and submarginal areas. One filling base of cell, two large, rather 'S' shaped ones crossing cell and equidistant from the base and each other and the one at cell-end, which also covers the bases of spaces 4, 5 and 6. A curved series of contiguous spots in the sub-bases of 6, 5, 4 and 3, the latter extending along vein 3 to near the black marginal spots. There is a smaller spot at base of space 3 adjacent to a large spot or bar crossing space 2. In space 2, immediately below the basal spot of space 3 is a large rather rounded triangular spot. There are two conjoined spots situated basad in the upper half of 1b. Two large rather irregular shaped spots in the post-discal area of 1b, the lower conjoined with the blackened tornus. Large twin black spots in the ochraceous olive submarginal and marginal areas of 1b with a faint indication of some above these in the blackened margin, which broadens at the apex and extends basad as interneural rays into the orange-tawny subapical area. Hind wing, ground colour tawny orange with a faint rosy tinge basad. Two small black spots in mid area of space 8, the outer small and half the size of the inner, which is only slightly smaller than the one situated basad in space 7, and a small spot in space 5. There is a double row of spots in the submarginal areas on a greenish tawny ground in spaces 7-2. Twin blue-centred marginal spots are present in the prominent tornal lobe. The greenish black of outer margin extends along the inner margin as far as vein 1a.

**FEMALE**. Larger than the male, length of fore wing 60 mm; shape less falcate; hind angle not produced, and angle almost a right-angle. Hind wing, margin rounded, edge serrate, with a suggestion of 'tails' at end of veins 2 and 4. *Upperside*. Fore wing ground colour black, with a large tawny orange patch occupying nearly the whole of basal two thirds of 1a-2, the outer border rounded but rather irregular, 11 mm from the hind angle in 1a and 13 mm in 2; another more rounded tawny orange patch is present toward the subapex, occupying the upper mid area of 3, widest at 4-5 then contracting in 6, the outer edge of the patch irregular. Hind wing with a large tawny orange patch, extending to, but paler on the inner fold which is rufous at its base, not quite reaching the base of the wing, where it is blackish. There is a dark dyslegnic spot at the subcosta; the outer border of the tawny orange area, which extends along the veins into the black border, is not sharply defined from it, as at the line of junction the patch is 'frayed'; border widest at 6, tapering to the hind angle and extending slightly up the inner fold; serrations on the edge black with slight white fringe between. The anal angle with a greenish line on admarginal, and more proximad, three greenish blue spots arranged in a triangle. *Underside*. Fore wing, tawny orange areas more or less as above, but that toward the hind margin of the fore wing more irregular on its distal side, while the subapical patch is larger than above, its inner edge sharply defined, but the outer with rays along the veins, the upper edge reaches the subcosta. There are two large black spots in the sub-base of 1b and a larger one in sub-base of 2. The cell, crossed by alternate heavy black bars, is tawny ochreous in between, base of cell black; two heavy bars wavy in mid area and a straight

bar at end; the black bar beyond in sub-bases of 4-6 conjoined with the heavy black bar which separates the upper tawny patch from the lower, and this bar is continued into 1b and 1a; the submargin carries a series of blackish spots extending from the subcosta to 3, with rays which extend to outer margin and separated by tawny rays, the black spots in the submarginal line from 3 to hind angle are in the form of ocelli, double in 1b. Hind wing mostly tawny orange, carrying four black spots in sub-cases 8, 7 and 5, that in 5 round and large; a small spot in 4, the outer edge of the tawny orange area defined by a series of contiguous black spots extending from the costa at upper angle to above the hind angle; this is followed by a zone of ochreous olive, in which there are rounded black spots of increasing size from the upper angle to the anal angle, where the spot is double, with two bluish white spots; edge of wing black with black along the veins; fringe between serrations pale whitish.

Palps rufous, with rufous spots in the mid line of the thorax and small spots on its side; abdomen with five rufous spots in central line.

RANGE. Republic of Congo (French Congo), and Central African Republic.

### *Charaxesournierae kigeziensis* Howarth

(Pls 3 & 4, figs 46 & 47; Map 3)

*Charaxesournierae kigeziensis* Howarth, 1969 : 152.

MALE. Fore wing length 50 mm; shape, costa slightly more curved than in the nominate race, the outer margin strongly incised, the apex falcate but tip rounded; hind angle projecting but rounded. Hind wing rounded to 3, the anal angle projecting strongly but rounded; the margin of the wing dentate, with the largest projection on vein 4. *Upperside*. Fore wing, ground colour black, pattern very similar to that of nominate male, but tawny orange patches more restricted, the patch on the hind margin filling the mid areas of 1a, 1b and slightly into 2; the subapical patch smaller than in nominate race, more sharply cut off on its upper costal end, the upper edge straighter, so also the distal side, this patch thus fills in the mid area of 3, the sub-bases of 4 and 5 and slightly into 6. Hind wing, tawny orange patch large, shading to blackish on the inner fold, which has an elongate pale mark in its centre. The orange patch is more restricted than in the nominate race; it has a dark spot in the subcosta, which may be obscured; the black border is wider than in nominate *fournierae*, clearcut on its inner edge, of almost even width from the upper angle to 4, where it contracts to give way to the projecting anal angle; this border is immaculate except for two blue spots at the anal angle. *Underside*. Fore wing ground colour black with a slight greenish tinge along the costa; tawny ochreous patches more extended than above, that on the hind margin extended more toward the base and distally, but reduced at upper border by two curved marks in its upper part of 1b, the outer one larger. The cell is crossed by a greenish ochre bar with a triangular extension into the base of 1c; there is also a dot in the sub-base and a pale angular line at vein 2 which connects up with the submarginal series of pale marks along this vein. The subapical patch is paler and larger than upperside and more extended toward the apex and costa, where it is shaded with greenish ochre; the submargin has a series of greenish ochre spots and rays, extending from the costa to distal edge of the patch, the marks in 1b-2 larger and more defined, with angular extensions toward the margin. The hind wing is mainly tawny ochreous, more orange toward the base; there are two large rounded black spots in 8 at subcosta, followed by a larger spot in 7 and a smaller rounded spot in sub-base 5 and a minute dot in space below. The outer border of the tawny patch shades to greenish ochre, and this zone carries a series of discrete ovoid black spots, which become conjoined and forming a line above the anal angle; the border carries a series of larger black spots, most of which connect up with the marginal black, the veins between them also black. The anal angle has two blue spots and a small dot in space above.

FEMALE. The palps and spots on the thorax are tawny orange, the abdomen black, with

two small tawny spots in the mid line. Larger than the male, fore wing length 64 mm; shape less falcate; hind wing rounded, the anal angle not projecting, the margin is bluntly dentate in lower half. *Upperside*. Fore wing pattern and colour as in the male, but bolder; the patch on the hind margin larger and more orange, extended basad and on its outer border toward the hind angle; the area within 1b with two blackish spots, and there is also a tawny streak in the lower part of the cell. The subapical patch is larger than that of the male and more tawny orange, extending from 3-7, the outer border zigzag, the inner more evenly curved; there is also an extension in the form of a triangular mark in the submargin of 2. Hind wing, mostly tawny orange, paler toward the costa and the inner fold which is buffish, with longitudinal dark lines where it joins the discal patch, the lower part brownish black. The black border is of more or less even width, though tapering slightly at the upper angle, 7 mm wide, invaded by tawny rays along either side of the veins from the patch, these being especially marked at the upper angle. The border is black and immaculate, except for these rays and the blue spots on admargin from 4 to the anal angle, where the spots are double with an indication of a greenish circle around them. *Underside*. Fore wing, costa greenish blue; tawny orange areas greatly extended but paler in colour compared with upperside, both in the disc and the subapex, the extensions into the cell paler, with a greenish ochre tinge. The black marks are strong, those in the cell are: one at base, an S mark at about mid point and a bar at its end, black spots also present in the sub-base of 2 and a double spot at upper part of base in 1b. The discal tawny area is separated from the subapical by a series of conjoined black marks forming a bar across the wing, from the subcosta to the margin in 2, represented in 1b by two bold black spots with a black curved line distally, which extends to the hind margin. The subapex has three black marks, the upper two elongate; the submargin carries a series of black marks, elongate from subcosta to 4, then more triangular but rounded and double in 1b, these marks separated by the dark ends of the veins. Hind wing ground colour as fore wing, the black spots bold, two black spots in sub-base of 8, larger conjoined spots in sub-base of 7 and a rounded spot in 5. The tawny ochre colour of the wing shades into the more greenish ochre border, where there is a series of discrete black rounded and ovoid spots which extend from the subcosta to the hind angle, where the black marking becomes a line.

On the submargin, within the greenish ochre border, is a series of larger black ovoid spots, that at anal angle with two blue spots. The veins between are black, extending inward from the narrow black edge, with the black extending up the inner fold.

**RANGE.** Uganda, in the south-west in the Kigezi district, in the Ishasha Gorge, Kayonza, where two males and three females have been taken.

### *Charaxes nobilis* Druce

#### *Charaxes nobilis nobilis* Druce

(Pls 4, 5, figs 48-52, 56, Map 3)

*Charaxes nobilis* Druce, 1873 : 13.

*Charaxes agabo* Distant, 1879 : 708.

*Charaxes homerus* Staudinger, 1891 : 132.

**MALE.** The jet-black thorax and upper abdominal segments are in strong contrast to the creamy white of the abdomen. Fore wing length 46-49 mm. Shape, apex tapering due to the strong inward curve of the outer margin in 3-4. *Upperside*. Fore wing, ground colour deep black, with olive sheen at base; a broad creamy band in the discal line extends from the hind margin to 3, the marginal mark in 1a elongate, that in 1b quadrate, 9 mm, the mark above as long but smaller, with proximal end rounded, the distal end angled, the mark in 3 smaller, and ovoid, the two upper spots separated by black and free; beyond in 5 is an oval creamy spot and in the costal region of subapex a smaller, less distinct spot. Margin of wing with

small white dots from hind angle to just short of the apex. Hind wing, basal area blackish, shading to smoky greyish, thus the large creamy area is not sharply defined proximally but is clear-cut distally, where it meets the broad black border which extends from the upper angle to the hind angle and slightly up the edge of the inner fold. Submargin with large bluish grey spots, double at the anal angle and represented on the inner fold by a triangular white spot; admargin with thin interrupted triangles, most evident in region of tails, that at anal angle tawny orange; edge of wing bluntly dentate, the tails sharply pointed, 5 & 4 mm in length. There is a black spot at sub-base of costa on the distal side of a shadow bar, where the strong black line of underside shows through. *Underside.* Fore wings, ground colour black, but pattern very bold; a white line at base of costa connecting with a bold white line on side of thorax; cell with two minute white dots in base, followed by a vertical silvery white line with another transverse line at mid-cell, and another larger, more quadrate spot at upper end of cell; on the lower vein of the cell is a white interrupted line in bases of 1b-2. Beyond the cell at bases of 5 and 6 is a large, somewhat triangular, silvery white mark, while beyond is a transverse silvery white bar of three spots, represented by a streak at costa and two larger marks separated only by the black veins. In the subapex are three somewhat quadrate silvery white marks arranged in a curve, separated only by black veins followed in the submargin by two smaller more rounded spots in 5-4; below in 2 & 1b are larger, more quadrate, conspicuous tawny orange marks, and a small tawny spot in 1a. The admargin carries a row of bluish grey lunules from hind angle to 3; edge of wing black with small white dots. The disc of the wing is occupied by a wide creamy band corresponding to that on the upperside, though somewhat wider. Hind wing, ground colour silvery white, traversed by two bold black curved lines; one passing through the sub-basal area curves round the edge of the inner fold and joins the submarginal band, the other runs through the disc from the costa and end of cell to above the anal angle; these two bold lines are joined by an inverted Y, the upper arm heavy, the lower thinner, the stalk and upper arm running along vein 2; in the submargin there is a bold black band partially separated into two by interrupted ochreous to orange lines, strongly orange at the anal angle, which has two lilac, black-ringed spots; on the distal side of this band is a series of bold white spots, those at the upper angle smaller, running from the upper angle to vein 2 and represented on the inner fold by a white triangle; the admargin has a series of interrupted white angular marks; edge of wing and tails black.

*FEMALE.* Fore wing length 55 mm. Shape less falcate than the male, outer border less incised; hind wing more rounded. *Upperside.* Fore wing, general pattern and colour as in the male but ground colour less intense black, the white patch on the fore wing in the hind area wider; the two subapical white spots larger, with an indistinct whitish mark toward the apex. There is also a slight indication of spots in the submarginal line corresponding to the spots of underside. A series of small white marginal spots, one to each interspace, except for space 1, where there are two. The hind wing basal white patch is more extended basad than in male and not sharply defined from black base; the inner fold more dusted over with brownish scales; the hind wing border is not so intense black, and the larger bluish spots more tinged with mauve; the admarginal row of lunules more distinct. Tails more robust in proportion to general larger size. The abdomen is black. *Underside.* Fore wing, generally similar to that of the male, but the white markings are more extensive, but not so silvery white. Hind wing pattern as in the male but ground colour less silvery white; the white marks in the black border more developed, especially the series of white marks on the admargin and those in the postdiscal line. Underside of abdomen black with interrupted white segmental rings.

This description is made from a female specimen taken at Burumbi, Cameroun, (*Preuss*), kindly loaned by Dr Hannemann, Berlin Museum. This specimen is marked as 'type', presumably of this sex, not of the species.

*RANGE.* West Africa, from Calabar in southern Nigeria to Cameroun and Congo Republic (French Equatorial Africa).

*Charaxes nobilis rosemariae* Rousseau-Decelle

(Pls 4 &amp; 5, figs 53-55; Map 3)

*Charaxes nobilis rosemariae* Rousseau-Decelle, 1934 : 233.

**MALE. Upperside.** Differs from the nominate race mainly by the greater expanse of the creamy patch in the fore wing and increased creamy area of the hind wing. Fore wing ground colour jet-black with slight olive sheen at base of wing. Discal creamy area broad, 16 mm at the hind margin and 1b and lower portion of mark in 2, the mark in 3, 10 mm at lower edge; inner ends of marks rounded, outer dentate in 1b, and sloping in 2 & 3; a pear-shaped bold creamy spot present in 5, and an obscure whitish mark at subapex. Hind wing, basal black area more restricted; the creamy patch thus wider, with a shadowy bar in sub-base representing the dark line of underside. Border black with slight greeny grey scaling proximally, the black extending up the edge of the inner fold; submargin with bold bluish grey spots, represented above the anal angle by a white spot; admarginal with interrupted angular marks of bluish grey; anal angle olive, with lilac spots. It may be noted here that the upperside of the abdomen is ochreous, with four black cross lines, not creamy white as in the nominate race.

**Underside.** Fore wing, ground colour black; silvery white lines and spots in and below the cell much as in the nominate race, but subcostal and subapical marks bolder; the upper three submarginal spots bold, those in 4 & 3 smaller and more linear, the tawny orange spots bold; admarginal bluish grey spots only present at 1a-1b; white dots on edge distinct. The large discal patch creamy, arranged as above. Hind wing ground colour silvery white; black lines in sub-base and across disc as in the nominate race but bolder as also the black border and submarginal silvery white spots.

**FEMALE. Upperside.** Fore wing creamy white discal band is more extended distally, thus reducing the width of the black border, on the proximal side, the creamy area extends more basad and is more rounded. The white marks in 5-6 bolder, as also is the subapical white spot. On the hind wing, the creamy white discal area is more extended basally and distally, so that the black border is reduced in width; the blue submarginal spots are well developed, as also are the admarginal marks. **Underside.** Though conforming to that of other races, it has extended white areas on both fore and hind wings; on the fore wing there is some linking of the large white marks in 7-5 with the upper mark on the discal patch, in area 4. On the hind wing the wider white patch encroaches more onto the black border; the submarginal white marks well developed as are also the admarginal triangular marks. Upper tail strong and robust, rounded at end, lower tail shorter, and more pointed, 10 mm and 5 mm long.

**RANGE.** Congo (Kinshasa) in the Katanga district, Kafakumba; also recorded from western Uganda, in the Kalinzu Forest.

I am indebted to Major Grahame for photographs of a male and female of this race. The male agrees in all respects with an example taken in western Uganda (Pl. 5, fig. 54.) It will be noted that the creamy white bar in the fore wing is considerably wider than in any other race; that of the hind wing extending basad and distally, so that the black border is narrower.

*Charaxes nobilis claudei* Le Moult

(Pl. 5, figs 57 &amp; 58)

*Charaxes nobilis claudei* Le Moult, 1933 : 17.

**MALE.** Fore wing length 45 mm; shape similar to nominate race. **Upperside.** Fore wing, colour and pattern also very similar, but differing appreciably by a reduction in the size of the white spots, especially those on the hind margin and 1b, and 6 & 7 mm wide, the spot in 5 large

and ovoid, those in the subapex, especially that in 7, moderately large and distinct. The hind wing band also reduced in width and not extending basad, especially at the costa, where it is only 13 mm; the submarginal row of blue spots much reduced in size; the white spot above the anal angle very distinct; the marginal border triangular blue spots distinct. Tails thinner, 6 mm in length. *Underside*. Coloration and pattern very similar to that of nominate race, but discal white bands much reduced in width, exhibiting a similar reduction to that noted on upper side.

**FEMALE.** *Upperside*. Fore wing, the reduction in the width of the bar is even more marked, the reduction being on both borders, but especially distally, width at 1a-1b, 16-12 mm. The white spot in 5 large and ovoid, the one above, small. The hind wing exhibits a similar marked reduction in the width of the discal band, both toward the base and distally, so that the black border is wide. The submarginal blue spots are limited to a few toward the hind angle, while admarginal interrupted spots are distinct and olive at the anal angle. Tails, upper 10 mm, lower more slender and pointed, 6 mm. *Underside*. Fore wing, though conforming to the usual pattern of the species, the discal white band is reduced in width as above; the marginal white spots are well developed, and at the hind angle there is a series of white admarginal spots in 1a and 1b. On the hind wing, the pattern conforms to that of the species as a whole, with reduced white areas; the submarginal white spots well developed, those on the admarginal also strong, but at the anal angle there is a distinct double-eyed ocellus.

I am indebted to Monsieur Jacques Plantrou, Paris, for photographs of this subspecies.

**RANGE.** At present known only from the western countries of 'West Africa': Guinea, to Ivory Coast.

### *Charaxes superbus* Schultze

(Pl. 5, figs 59 & 60; Map 3)

*Charaxes superbus* Schultze, 1908 : 172.

This species is very similar to *Charaxes nobilis* Druce, but can be readily distinguished by the ochreous distal edge to the hind wing discal creamy white patch, which is even more evident on the underside. There are other differences, which will be mentioned in the descriptions.

**MALE.** Fore wing length 46-50 mm; costa slightly curved, apex rounded, but outer border strongly incised at 2-3, hind angle projecting at 1a-1b, forming almost a right angle to the hind border. *Upperside*. Fore wing ground colour black; margin with small creamy white spots, double in 1b. Disc of wing with a series of creamy white elongate marks commencing at about mid-point on the hind margin, extending through 1b, where the lower part of the mark is extended, proximally and distally, the mark in 2 shorter but also with extension in lower half, thus giving the band an irregular edge; the band is represented in 3 by a crescentic or ovoid smaller spot, and in mid-point of 5 and 6 by smaller spots; there is also a small white subcostal spot in the subapex. There is some slight difference in this band in specimens from Cameroun and from Ouessou, Republic of Congo. (Moyen Congo.) Hind wing, basal triangle black, shading to white on the upper part of the inner fold, remainder of fold black, with a white spot above the anal angle. Disc of wing with a broad creamy white patch, commencing at the upper margin and extending to just short of the inner fold, its outer border shaded with ochreous, especially on its lower half. Border of wing black, carrying a series of bluish white spots in the submarginal line, and a series of double white marks on the admarginal, the marks at anal angle bluish to lilac. Edge of wing bluntly dentate, but with strong though shortish tails at ends of veins 4 and a less strong tail at 2 conjoined to the anal

angle, which is strongly produced. Distal half of abdomen white. *Underside*, boldly marked in white on a black ground. Fore wing, base of costa white; cell with two small linear marks at base and a large triangular or quadrate mark at end; small irregular white marks at bases of 1b, 2 & 3; discal white patch corresponding to that of upperside here slightly broader, but with less jagged edges, the mark in 1b with incised inner end to accommodate the white mark in sub-base; the crescentic spot in 4 is continued up toward the costa by elongate marks, forming a bar; beyond this is a bar of contiguous white spots in 5-7. The submargin carries a series of almost quadrate spots, the five upper ones white in colour, the others more separated and buffish ochreous; the admargin has a series of white spots, double in 1b. Hind wing, basal area black with a narrow white line at base, followed by a broader angled white bar extending from the costa, through the sub-base of the cell, then tapering toward the inner fold. This is followed by a long triangular mark in white, its base towards the anal angle, and flanked by a longer mark tapering at both ends in the inner fold, which has a further narrow white line along its inner edge. The disc of the wing has a large white patch, triangular in shape, base toward the costa, tapering towards the anal angle and shaded on its distal side by ochre-yellow. The submarginal row of spots is complete from upper angle, where the spot is small, to the hind angle where the mark is bluish. The admargin carries double, triangular white spots; edge of wing black.

FEMALE. Larger than the male, fore wing length 60 mm. *Upperside*. Fore wing, ground colour black, not so intense as the male. Creamy white pattern in disc of wing, similar to that of male, but enlarged; the spots in the subapex also larger; the submargin has a series of obscured whitish spots, the subcostal one white and distinct; the white marginal spots are larger than in the male and so more distinct. The hind wing basal area is black, which extends into the inner fold, which has three whitish elongate streaks and a large white spot above the anal angle. The discal creamy white band as in the male, but broader, the upper costal end almost parallel-sided, the lower end angled to above the anal angle, strongly shaded on its outer side by ochreous. The submarginal spots are bluish white, terminating in the double spot at the anal angle. The marginal double triangular spots are white, those at base of tails extending up the tails. Tails longer and more robust than those of the male, upper 10 mm, lower 5 mm; anal angle with bluish white edge. Upper side of abdomen buffish. *Underside*. Ground colour black. Pattern as in the male, but bolder. The submarginal row of spots bold, the five upper white, those toward the hind angle ochreous. Hind wing, pattern as in the male, but bolder, the linear marks on the inner fold well marked. The discal white patch as in the male but outer border strongly edged in ochre-yellow. The submarginal and marginal spots bolder. Underside of abdomen brownish with buffish cross lines.

I am indebted to Monsieur Jaques Plantrou for photographs of typical specimens, including the neallotype female.

RANGE. Cameroun, with a slight extension into adjoining Republic of Congo, at Ouesso.

#### SYSTEMATIC LIST

##### *Charaxes acraeoides* Druce

*Charaxes acraeoides* Druce, 1908. Type locality: Cameroun.

Range: Cameroun and adjacent area of Republic of Congo (French Equatorial Africa—Moyen Congo).

##### *Charaxes fournierae* Le Moul't

*Charaxes fournierae* Le Moul't, 1930. Type locality: French Congo (Republic of Congo).

Range: Republic of Congo and Central African Republic.

*fournierae kigeziensis* Howarth, 1969. Type locality: Kayonza, Kigezi, Uganda.

Range: South-western Uganda, in the Ishasha Gorge, Kayonza of the Kigezi district.

### *Charaxes nobilis* Druce

*Charaxes nobilis* Druce, 1873. Type locality: Old Calabar, Nigeria.

Range: West Africa, from southern Nigeria to Cameroun, Congo Republic (French Equatorial Africa).

*nobilis rosemariae* Rousseau-Decelle, 1934. Type locality: Kafakumba, Congo (Kinshasa).

Range: Congo (Kinshasa), Katanga district, Kafakumba. Also recorded from western Uganda in the Kalinzu Forest.

*nobilis claudeni* Le Moul, 1933. Type locality: Guinea.

Range: Only known from western countries of West Africa: Guinea to Ivory Coast.

### *Charaxes superbus* Schultze

*Charaxes superbus* Schultze, 1908. Type locality: North-western Cameroun, Bipindi.

Range: Cameroun and adjacent area of Republic of Congo at Ouessou.

## 4. THE *CHARAXES EUPALE* COMPLEX

The last comprehensive review of the '*eupale*-group' was that by Joicey & Talbot in 1921. They considered that members of this 'complex' could be divided into three species, two with sub-species, on the basis that these 'species' overlapped and were found together, and that the genitalia differed somewhat. A study of a very large number of specimens from throughout their range, supports their view in the main.

The general grouping as given by Bryk, 1939 : 462-465, conforms more or less with that of Joicey & Talbot, and is here used as a basis for discussion. One new species has been added since 1939.

### *Charaxes eupale* (DRURY) AND ITS SUBSPECIES

#### *Charaxes eupale eupale* (Drury)

(Pl. 6, figs 61-64, Map 4)

*Papilio Plebejus Urbanus eupale* Drury, 1782 : 7.

*Papilio Nymphalis amasia* Fabricius, 1795 : 136.

*Charaxes eupale* (Drury); Doubleday, 1844 : 111.

For full references, *vide* Bryk, 1939.

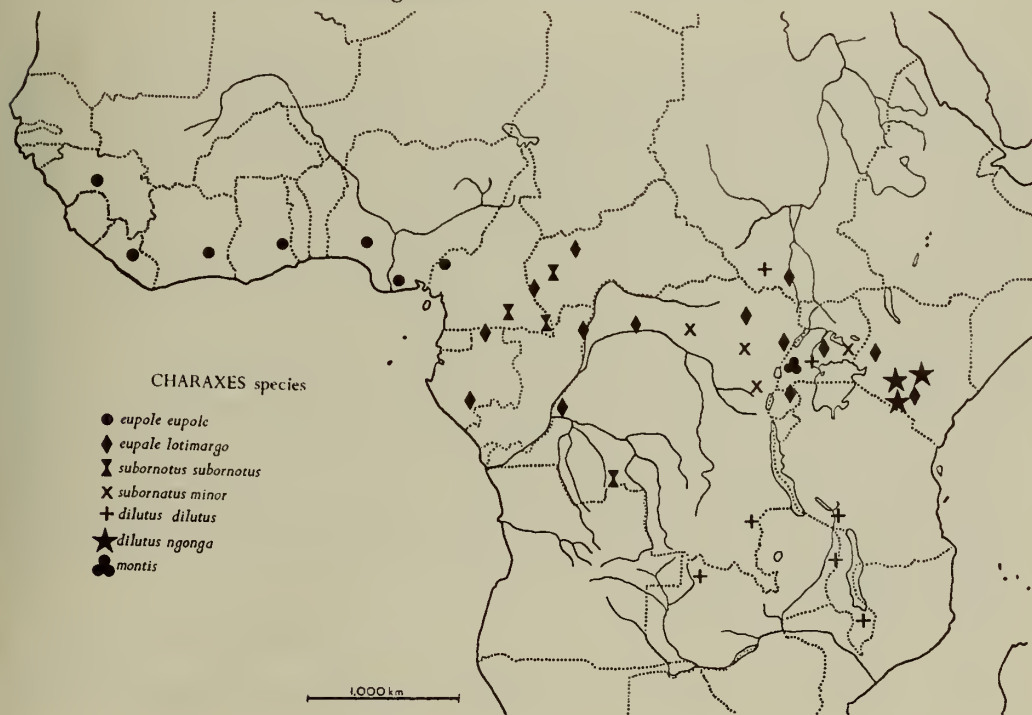
MALE. Fore wing length 30-35 mm. Shape, apex rather pointed but not falcate. *Upper-side*. Fore wing basal half of wing pale satiny greenish white, distal half dull matt green, the



line of division clear-cut, starting just beyond the end of the cell, at which point there is a black spot, at right angles to the costa, crossing to well within the hind angle, the inner edge of the green somewhat sinuate and often accentuated by some brownish scaling, most evident at the tornus. There is often a black spot in postdiscal line on veins 6 and 7. Hind wing, almost uniform satiny greenish white, with a slight shading to brownish on the edge of the inner fold and the margin; submargin with a row of brownish black spots, usually triangular in shape, with off-centre black dot, that at anal angle with white centre. *Underside*. Fore wing, dull matt greenish shading to almost whitish in 1a and the greater part of 1b; cell with obscured silvery white lines in sub-base, with a stronger whitish bar at mid point often with brownish centre and a dark spot at upper part of cell end. The disc of the wing with two brownish marks outlined in white in upper part of 1b, 2 & 3, often indistinct and frequently rubbed off; submargin with rather obscure whitish spots, rather variable, the two in subapex with black dots distally. Hind wing, ground colour as fore wing, the cell with a few white scales forming a very broken bar and often obscure; a rather ill-defined series of white marks, larger and with some brownish scaling in mid area, extends from the costa to just above the anal angle; submargin with series of small black dots with white surround, largest in 3, and double at anal angle.

**FEMALE.** Fore wing length 34-35 mm, thus larger than the male, the greater size enhanced by the less pointed tip and straighter outer margin. *Upperside*. Fore wing, general colour duller than the male, the line of division between the basal greenish-white and the darker green apical half, less clear-cut, but the darker green extending down the outer margin to the hind angle as in the male, where there is some brownish scaling. A minute black dot is present at the upper part of the end of the cell. Hind wing, margin rounder than that of male, with a suggestion of a 'tail' at the end of vein 4; submarginal spots and edge as in the male. *Underside*. Similar to that of male but duller, and the restricted pattern even more obscure.

**RANGE.** Sierra Leone to Nigeria.



*Charaxes eupale latimargo* Joicey & Talbot

(Pl. 6, figs 65-69, Map 4)

*Charaxes eupale latimargo* Joicey & Talbot, 1921 : 74.*Charaxes eupale schultzi* Röber, 1926 : 575.

MALE. Fore wing length 30-33 mm. Shape similar to the nominate race. *Upperside*. Fore wing, coloration also very similar, the chief difference being the greater extent of the pale basal area, which extends in the costal area further from the end of the cell, then passes in a curve to the hind angle and nearer to the margin than in the nominate race; there is little or no brownish scaling at the line of junction between the two areas. Hind wing, submarginal dark spotting, though variable in size, is always smaller than in nominate race and the margin of the wing is far less suffused with brownish. *Underside*. Fore wing, very similar to the nominate, but white bars in the cell usually stronger; the brownish marks in the discal line often limited to that in cellule 2, the upper ones hardly visible. The hind wing markings less strong.

FEMALE. Slightly larger than male. Fore wing less pointed, hind wing more rounded. *Upperside*. Dark portion of fore wing less strongly defined from basal pale area; submarginal spots of hind wing less strong. *Underside*. Pattern less strong.

RANGE. Cameroun, Central African Republic, Republic of Congo, Gabon, northern Angola, Congo (Kinshasa), Uganda and north-western Kenya to the Nairobi area, southern Sudan.

*Charaxes subornatus subornatus* Schultze

(Pl. 6, figs 70 &amp; 71; Map 4)

*Charaxes subornatus* Schultze, 1917 : 82.

MALE. Fore wing length, 34-35 mm. *Upperside*. Fore wing, general scheme of coloration and pattern as in *eupale*, but pale basal areas more extended, more as in the female of *dilutus*, but the line of junction of the two basic colours commencing well beyond the end of the cell in a curve, thus encroaching on the inner border of the darker green apical area, especially noticeable on the border in areas 1b-3, and not reaching the margin in 1a. There is the usual black spot in the upper part of the end of the cell. Hind wing, pale greenish white with less satiny sheen than the fore wing; the submargin with limited black spots from 3 to the anal angle, the twin spots at anal angle with white centres. *Underside*. Fore wing, duller pale green ground shading to white on the hind area in 1a-1b; a silvery white bar, slightly outlined in black, with a black dot in subcosta, crosses the cell at about mid-point, and extends to 1b, the black dot of the upperside slightly represented; the disc of the wing crossed by a silvery white bar with irregular borders which extends from the costa to vein 2, the outer edge of the bar outlined in black, with some black scaling beyond and some brownish scaling in mid lower part; postdiscal silvery spots, with black marks distally, extend from the subapex to 1b where the black marks are distinct, and in addition, there are two black dots on the submargin of 1b which are characteristic. Hind wing, ground colour pale dull greenish white with a few white scales forming a narrow line in the sub-base; the disc crossed by an almost silvery white bar edged in black proximally, the outer border with black and brownish scaling irregular; the submargin with obscure whitish spots with black dots, with a series of obscured whitish triangles on the admarginal, which have punctiform black dots, the spot at the anal angle larger, with white dot in the centre; extreme edge brownish.

FEMALE. Larger than male. Fore wing less pointed, hind wing more rounded. *Upperside*. Pattern less defined in both fore and hind wing. *Underside*. Similar to male but less strong.

RANGE. Cameroun, Central African Republic, Republic of Congo, and in the Kasai district of Congo.

*Charaxes subornatus minor* Joicey & Talbot

(Pl. 6, fig. 72; Map 4)

*Charaxes subornatus minor* Joicey & Talbot, 1921 : 74-75.

MALE. Fore wing length 28-32 mm. *Upperside*. Fore wing as in nominate race, but the basal pale area not so curved distally, the junction with the darker apical area being more even, but encroaching into the margin of 1b and reaching the edge in 1a. Some specimens have a faint trace of black dots in submarginal line in 4-7. Hind wing as in nominate race. *Underside*. Silvery bars as in nominate race, the black spots on admarginal 1b of fore wing, well marked.

FEMALE. *Upperside*. Differences between sexes less marked than in nominate race, but fore wing less pointed and hind wing more rounded. *Underside*. Pattern less strong.

RANGE. Eastern Congo (Kinshasa), in the region of Epulu and the Ituri Forest and Semliki Valley, extending into Uganda in the Bwamba Valley and in the Kigezi district of south-western Uganda; also present in central Uganda and north-western Kenya in the Elgon area. It was also recorded from the Nairobi area by Talbot, but this needs verification. This race of *subornatus*, therefore, has a considerable overlap with *Ch. eupale latimargo*, and *Ch. dilutus*; also with *Ch. montis* in the Kigezi area of Uganda.

*Charaxes dilutus dilutus* Rothschild

(Pls 6 &amp; 7, figs 73-76; Map 4)

*Charaxes eupale dilutus* Rothschild, 1898 : 97.*Charaxes dilutus* Rothschild; Joicey & Talbot, 1921 : 69.

MALE. Fore wing length 30-32 mm. *Upperside*. Fore wing, basal area pale greenish white with a strong satiny sheen particularly toward the base, distal half matt green, the line of junction of the two, commencing at the costa beyond the end of the cell, is zigzag particularly in its lower half where it crosses 1b-3, the green colour extending to the margin of 1a at hind angle. There is the usual small black dot at the upper end of the cell and there are obscure dark dots in the discal line and also in the postdiscal line; the lower part of the margin with brownish tinge especially at angle. Hind wing pale greenish white to margin, which has a narrow brownish edge and on the submargin there is a series of brownish spots with black spots distally which vary in size, the anal spot double and sometimes white-centred. *Underside*, fore wing dull pale green, shading to whitish on 1a and on the greater part of 1b. Base of costa brownish. The cell is crossed by a silvery bar extending from costa and slightly into 3, this bar sometimes with brownish scales intermixed; in the discal line a mixture of silvery and brownish scales strongest in 2-3, with a varying amount of black on margins of these marks; postdiscal row of rather obscure white spots with black distally extends from apex to 2; submargin with obscured whitish spots in 2-5. Hind wing dull pale green, the sub-base with a few silvery scales in no fixed pattern; the disc crossed by a silvery bar outlined narrowly in black proximally, and with some brown scaling distally; a rather obscured series of white and black dots are present in the submarginal line. The underside marks are more visible if the insect is held up to the light.

FEMALE. Larger than the male, fore wing length 33-35 mm. Compared with the male, the shape of fore wing less pointed; the apical darker green less deep in colour, the line of junction of the two basic colours as in the male. The hind wing is slightly paler but submarginal dark spots are similar and equally variable.

RANGE. Malawi, Zambia, western Katanga and eastern Angola, and in Tanzania at Kigoma on the north-east of Lake Tanganyika.

*Charaxes dilutus ngonga* subsp. n.

(Pl. 7, figs 77-79; Map 4)

MALE. Fore wing length 28-30 mm, thus smaller than nominate race. *Upperside*. Fore wing, the pale greenish white ground colour is less green than in nominate, especially in the females; the apical green with a similar inner border. On the hind wing the submarginal blackish spots are slightly larger and the marginal border wider, with some brownish olive scaling proximally. *Underside*. Markings are similarly placed, but slightly less dark in the lower discal line, and the whole ground colour has a more silvery bloom, less greenish.

FEMALE. Fore wing length 32 mm. *Upperside* and *underside* similar to those of male, except that the submarginal series of brownish spots on upperside of hind wing is not so well developed and prominent.

Holotype ♂. KENYA: Ngong. Bred x. 1956 (*van Someren*).

Allotype ♀. KENYA: Ngong. Offspring emerged iv, v. 1956.

Paratype ♂. KENYA: [+ an illegible word].

Paratype ♀. KENYA: Ngong, iv. 1956 (*van Someren*).

Types and paratypes in BMNH.

RANGE. Kenya, especially in the Highland area around Nairobi and Kikuyu to Mt Kenya and the Aberdares; a very similar form occurs in the Kigezi highlands of Uganda. *Charaxes dilutus* is recorded from southern Sudan (*Wilson*) but I have been unable to examine specimens; Carpenter also records *eupale latimargo* from the same area.

*Charaxes montis* Jackson, stat. n.

(Pl. 7, figs 80, 81; Map 4)

*Charaxes dilutus montis* Jackson, 1956 : 67.

Described as a subspecies of *Charaxes dilutus* on the basis that the genitalia have a similar shaped uncus (*teste* Bennett), the insect is here raised to specific rank because of marked macroscopical differences, and the fact that *Ch. dilutus* occurs in the Kigezi district along with *montis*, as also does *eupale latimargo*.

MALE. Fore wing length 29-30 mm. Shape distinctive, the apex very pointed and the outer margin strongly incised at 4-5, giving a falcate appearance, more so than in any other species of the group; moreover, the antennae are black. *Upperside*. For wing, basal pale area greenish white with a yellowish tinge to the satiny area at the base of the wing; apical portion wing darker matt-green, the line of junction between the two areas runs in a curve from beyond the end of the cell, where the costa is also green, passing obliquely through the sub-bases of 5-4, then, with a slight kink to 3, decreases rather rapidly to vein 2, extending to the hind margin in almost even width; the margin of the wing slightly darker. There is only the faintest trace, or no spot, at the upper part of the end of the cell; the discal black spots and those in the postdiscal line equally faint. Hind wing, pale greenish white with slight creamy tinge, immaculate, except for an admarginal row of white-centred black dots, that in 3 triangular and largest; edge with brownish black continuous lunules. *Underside*. Fore wing, pale matt-green shading to paler whitish in 1a-1b; silvery white bar through sub-base of cell crosses into base of 2; discal silvery bar, widest at the costa and 6, 4 mm, takes a slight kink and tapers to the dark spot in discal line at 2; obscure white spots are present in the postdiscal line, those toward the apex more distinct and black on distal side; admarginal with rather diffuse white

spots, largest at 2-4, become obscure above, but may coalesce and touch the outer margin; there is a sprinkling of white scales present at the base of the wing between the two silvery bars and between the discal bar and the marginal white in 2-3. Hind wing, ground colour dull light green; a brownish spot present in the cell with a trace of one in space below; discal line of brownish spots, largest at 3, have black lines or spots distally; submarginal row of white and black spots faintly indicated; admarginal black dots with white surround more visible; extreme edge slightly brownish.

**FEMALE.** Larger and paler than the male, fore wing length 31 mm. *Upperside.* Fore wing, the green apical portion even more restricted than in the male, and tapering rapidly to 2, is represented on the margin by a thin brownish olive line, which only just reaches 1a. The hind wing is almost immaculate except for black dots on the admarginal visible in 2-3 and at anal angle; edge narrowly shaded with brownish black. *Underside.* Paler than the male, more silvery overall, and spots very subdued.

**RANGE.** Uganda, Kigezi district, in the high Mafuga Forest at 8,000-9,000 ft and in the upper Impenetrable Forest where it occurred in some numbers; it was less plentiful in the Kayonza area. As with other members of this group, females are less in evidence.

#### SYSTEMATIC LIST

##### *Charaxes eupale* (Drury)

*Charaxes eupale eupale* (Drury), 1782. Type locality: Sierra Leone.

Range: Sierra Leone to Nigeria.

*eupale latimargo* Joicey & Talbot, 1921. Type locality: Bitje, Cameroun.

Range: Cameroun, Central African Republic, Republic of Congo, Gabon, northern Angola, Congo (Kinshasa), Uganda, north-western Kenya to Nairobi area, southern Sudan.

##### *Charaxes subornatus* Schultze

*Charaxes subornatus subornatus* Schultze 1917. Type locality: Cameroun.

Range: Cameroun, Central African Republic, Republic of Congo and in the Kasai district of Congo.

*subornatus minor* Joicey & Talbot, 1921. Type locality: Mabira Forest, Uganda.

Range: E. Congo (Kinshasa) in Epulu region and Ituri Forest and Semliki Valley; Uganda, Bwamba Valley and Kigezi district, C. Uganda and N.W. Kenya in Elgon area. There is a doubtful record from the Nairobi area.

##### *Charaxes dilutus* Rothschild

*Charaxes dilutus dilutus* Rothschild, 1898. Type locality: Zomba, Malawi.

Range: Malawi, western Katanga and eastern Angola, Tanzania, Kigoma district, southern Sudan, Zambia.

*dilutus ngonga* subsp. n.

Range: Kenya Highlands, Nairobi and Kikuyu to Mt Kenya, the Aberdares, Uganda, Kigezi district.

***Charaxes montis* Jackson**

*Charaxes montis* Jackson, 1957. Type locality: Kigezi district, Uganda.

Range: Uganda, Kigezi Province at Mafuga and Impenetrable Forest, Kayonza.

5. THE **CHARAXES ZOLINA-NEANTHES,**  
**KAHLDENI-HOMEYERI** COMPLEX

In this complex we have two species, each exhibiting very similar so-called 'seasonal forms', a pale greenish-white form and a brown form. Though the two species have a very generally similar appearance, they must be considered as distinct, since there is considerable overlap in distribution of the several races. Thus for example, *kahldeni* overlaps with *zoolina ehmccke* in Angola, and *kahldeni* with *zoolina* in western Uganda. Not only do the two 'seasonal forms' of these two species seem to have developed along parallel lines, and intermediates between 'wet and dry' have been taken, and the two forms found 'in cop.', which clearly indicates the conspecificity of the forms, but also the distinctness of *kahldeni* from *zoolina*, and the distribution of the two, supports this view.

***Charaxes zoolina* (Westwood)**

(Pls 7, 8, figs 82-92; Map 5)

*Nymphalis zoolina* Westwood, 1850 : 309, pl. 53, fig. 1.

*Charaxes zoolina* (Westwood) Trimen, 1862 : 341.

Form ***zoolina*** Westwood

MALE. Fore wing length, 28-30 mm. Fore wing, costa slightly curved, outer margin incised 2-4, apex falcate but square-cut at end. *Upperside*. Fore wing, base of costa brownish, shading to black beyond; basal area creamy with greenish tinge, base smoky; apex and border black, the black extending down the subcosta into the cell, which has a strong black bar at end with an extension into base of 3 and sub-base of 4, this bar connected up with the black of the apex; base of cell smoky, reducing the pale ground into blunt curved points. Pale spots in 5-7 variable in number and size, that in 6 always present; submarginal row of whitish spots may extend from subapex to 2 but usually ends at 3. There is an indication of the dark bar of the lower side showing through in the discal line in 1b and 2. Hind wing, ground colour creamy with stronger greenish tinge at base of wing, the inner fold paler, but with dark shading at upper border especially toward the hind angle, where there is a pale triangular spot; dark line of underside showing through in discal line; border black, tapering toward the anal angle; submargin with whitish spots, which may be distinct and complete or limited to those in the curve; admarginal line rufous, strong or faint, shading to olive-ochre at anal angle which carries two blue-centred black spots; margin of wing very slightly dentate but no tail on 4, that on vein 2 black with white central line, spatulate at end, 6-7 mm in length. *Underside*. Fore wing,

more greenish tinged with a distinct satiny gloss. Base of costa with silvery white spot or line; cell with dark bar at sub-base, the bar at end strong and often connected with the inner arm of the postdiscal dark line by black veins; postdiscal dark bar strong, extending from costa to within hind angle; submarginal row of satiny white spots complete, followed by a narrow line of linear marks along the admarginal; margin of wing slightly browner but edge narrowly black. Hind wing, ground colour as fore wing, sub-base of wing with a thin curved line joining up with the inner arm of the strong dark Y-shaped bar, the outer arm joining with the inner along the upper edge of the inner fold, with darkened veins extending to a cross-line above the anal angle, which has a triangular white spot; border of wing more brownish, carrying a submarginal row of whitish and dark spots at anal end; admarginal with larger silvery white spots, black-ringed toward the anal angle; border with ochreous orange line shading to olive at the anal angle, which has the usual twin black spots with lilac centres; edge of wing black.

**FEMALE.** Larger than the male, fore wing length 30-32 mm. Outer margin less incised. *Upperside.* Fore wing, ground colour creamy with greenish tinge, especially toward the base; pattern less heavy than in the male, and tending to be broken up, the dark bar at end of cell more tapering and not extending to 2, the dark bar beyond in sub-bases 5-6 may be strong or faint; the dark wavy line from subapex to within hind angle variable, fading out in 1b; the blackish border heaviest at apex tapering toward the hind angle, the enclosed white spots largest at the subapex and solitary, the rest diminishing in size to the hind angle. Hind wing, ground colour as fore wing; with dark lines of underside showing through; border variable on inner edge, usually interrupted at mid areas; submarginal whitish spots large at upper angle but diminishing in size toward the double spot at the anal angle; admarginal ochreous orange, shading to olive at anal angle; edge black. Tails on 4 & 2, 5 & 7 mm in length with spatulate ends. *Underside.* Fore wing, ground colour as above but slightly paler and with a satiny sheen



MAP 5.

extending to the margin of the wing. Pattern brownish black, somewhat similar to upperside, but cell with a dark mark at base, a curved line in mid-area, and the bar at its end extending into sub-bases of 2 and slightly into 1b. The line through sub-bases of 8-6 variable in width with a trace of marks in 2-3; submarginal dark sinuous line strong in subapex narrowing toward the hind angle; pale spots beyond, relatively large, bordered distally by the admarginal line of lunules; margin brownish, edge narrowly black, with white dot at end of veins. Hind wing ground colour as fore; pattern much as in the male, but less black; submarginal row of lunules edged black proximally, strongest toward anal angle; admarginal line of larger pale spots with black distally also heavy at the anal angle; border ochreous orange, edged with black. Anal angle with lilac-centred black spots on an olive ground.

The above descriptions are taken from a series of specimens obtained in Kenya and Uganda, and are representative. Marked variants occur and appear to be commoner in the South Kavirondo area of Kenya (Pl. 7, figs 82 & 84). They are characterized by enlarged white spots in the apical portion of the fore wing and enlarged spots in the hind wing border. This variation occurs in both sexes. It is here also that intergrades between *zoolina* and f. *neanthes* are sometimes taken (Pl. 7, fig. 83).

#### Form *neanthes* (Hewitson)

(Pls 7 & 8, figs 87-92; Map 5)

*Nymphalis neanthes* Hewitson, 1854 : (3), pl. 45, figs 1-3.

MALE. Fore wing length 25-28 mm. Shape as in nominate form, but apex often less falcate, and end more bluntly rounded. *Upperside*. Fore wing, ground colour ochreous to tawny orange. Pattern very similar to that of *zoolina* but dark areas are rusty brown, not black; the pale spots on the submargin of wing, larger. Hind wing, ground colour as fore wing, dark markings rusty brown; pale admarginal spots ochreous, shaded with black distally; anal angle with double spots variable in size. Single tail at 2, 5-6 mm in length, with spatulate end, the base of the tail merged into the prolonged anal angle. *Underside*. Fore wing, ground colour rather variable, ochraceous to rusty ochreous, almost uniform or strongly freckled with dark scales. Pattern may be almost entirely obscured or with a dark brownish black discal line edged with white proximally crossing both wings. Fore wing usually with obscured punctiform dark spots in submarginal line; edge of wing darker brownish. Hind wing, pattern obscured, though it may be well marked in form with dark discal line, but usually with a row of dark punctiform spots on the admargin. Veins greenish.

FEMALE. Larger than the male, fore wing length 30-35 mm; shape as in form *zoolina*. *Uppersides*. Fore wing, ground colour ochreous-orange but paler than in the male; pattern variable but usually faintly indicated, the dark marks rusty brown; the dark marks of underside, if strong show through in the discal line. Tails well developed, upper 5-6 mm, lower 7 mm. *Underside*. Fore wing, ground colour varying from a pale ochreous to tawny ochreous with a matt surface. Pattern almost entirely subdued even to the discal line, but this is usually strong on both wings. Tails usually brown.

Minor forms have been described, such as *homochrous* Le Cerf (1923 : 429) and *obscuratus* Suffert (1904 : 123). The two main forms, though considered 'seasonal' in some areas, can be taken in the same locality, at the same time, throughout the greater part of its range. When sufficient material has been collected from the outlying districts of its range, it may be possible to recognize local races, other than those mentioned in this review.



RANGE. Described from Natal, the nominate form and form *neanthes* range from the eastern coast of South Africa through Mozambique, Zambia, Rhodesia and Malawi to Tanzania, Kenya, Uganda, southern Sudan, Ethiopia and the Somali Republic.

*Charaxes zoolina mafugensis* Jackson

(Pl. 8, figs 93-96; Map 5)

*Charaxes zoolina mafugensis* Jackson, 1956 : 67.

This subspecies was based only on the male sex of the *neanthes*-like form of this race; it is mainly characterized by the very dark borders of both wings, compared with the male form *neanthes* of the nominate race.

The '*neanthes*'-like form

(Pl. 8, fig. 93)

MALE. Fore wing length 28-30 mm; shape as in the nominate f. *neanthes*. *Upperside*. Fore wing, ground colour richer rufescent orange, border of wing darker rusty brown, base of wing with a slight olive tinge. The short dark bar at end of cell, sometimes continued into sub-base of 2, slightly broader; bar in sub-bases 5-6; the dark border, enclosing submarginal spots which show up distinctly against the dark ground, extends from the subapex to 1b. Hind wing, ground colour as fore wing, paler on the inner fold; border dark as on the fore wing, clearly demarcated from the orange by a zigzag dark line commencing at the costa and extending to above the hind angle, on its distal side a series of blackish lunules distally bordered by a row of paler indistinct spots; border dark rufous brownish with a series of rather obscure dark marks, most distinct on the hind margin above the anal angle with its double spots on an ochreous olive ground. Tail at end of vein 2 with spatulate end, 7 mm in length. There is sometimes a dark line along the lower part of the inner fold arising from above the hind angle. *Underside*. Fore wing, ground colour darker and richer rusty-brown than nominate *neanthes*. Pattern if present, variable, from almost uniform brown with only a trace of dark marks along the costa to well marked bars through the disc of fore wing and also on the hind wing.

FEMALE. Fore wing length 30-32 mm; shape as in nominate *neanthes* female. *Upperside*. Fore wing, ground colour paler than the male, tinged with more olive at base.

Pattern as in the male, but postdiscal line of blackish lunules more angled proximad in 3, with consequent larger submarginal orange spots; border dark rusty brown. Hind wing, ground colour paler than that of male, the inner fold paler and tinged with greenish; the distinct row of dark lunules more proximad with larger, more distinct spots on the border; admarginal brownish and angled at 4 to accommodate the upper tail, 6 mm in length, lower 7-8 mm. *Underside*. Fore wing, paler than that of male, more russet; pattern obscured except for the dark bar in the fore wing, which continues through the hind wing to hind angle. Hind wing, admarginal with punctiform dark spots; edge of wing darker extending onto tails.

The '*zoolina*'-like form

(Pl. 8, figs 94-96)

MALE. Fore wing length 28-30 mm; shape as in nominate *zoolina*. *Upperside*. Fore wing, ground colour creamy white with greenish tinge, especially at base; pattern as in the nominate race but white area more extended distad toward the hind angle. Black mark at end of cell variable, heavy or reduced, but white spots within the black border larger, especially those in sub-bases 5-6. Hind wing, with extended white area distad, reducing the width of

the black border, but the contained white spots, larger. *Underside*. Fore wing, ground colour more greenish white and more extended; fore wing cell with only one black line. Hind wing with extended white areas but black marks stronger, that on submargin straighter and nearer the border; admarginal spots reduced.

RANGE. Uganda, in the south-western district of Kigezi, especially in the Mafuga Forest, which is part of the Impenetrable Forest, at 8,000–9,000 feet; but also found in the Lower Kayonza Forest.

### *Charaxes zoolina ehmckei* Dewitz

*Charaxes ehmckei* Dewitz, 1882 : 382.

*Charaxes zoolina ehmckei* f. *phanera* Jordan, 1908 : lxix.

MALE. Fore wing length 30 mm; shape as in *neanthes*. *Upperside*. Fore wing, superficially resembling the female of *zoolina betsimisaraka* form *betanimena* Lucas, of Madagascar, the basal area being white with a greenish yellow tint, the rest of the fore wing more ochreous; the border, at line of junction tawny, the rest brownish black with the postdiscal and submarginal spots well marked and ochreous in colour; a faint dark line present at end of cell. Hind wing, basal area as fore wing; inner fold paler; border brownish black with sinuous inner edge, tapering toward the tail; the two rows of ochreous spots obscured. Tail at vein 2 as in other males of the species. *Underside*. Much as in *neanthes*, but median band vestigial.

FEMALE. No specimen available.

RANGE. Angola, at Pungo Andongo.

### *Charaxes zoolina betsimisaraka* Lucas

(Pl. 8, figs 97–100; Map 5)

*Charaxes betsimisaraka* Lucas, 1872 : 3.

*Charaxes relatus* Butler, 1880 : 354.

*Charaxes zoolina betsimisaraka* f. *firmus* Le Cerf, 1923 : 429.

#### Form *betsimisaraka* Lucas – the ‘*zoolina*’-like form

MALE. Fore wing length 29–32 mm; shape as in nominate *zoolina* but with deeper curve to outer margin and more protruding hind angle, where at vein 2 there is a definite projection. On the hind wing there is an even more marked ‘tail’ at vein 4 and the anal angle is more prolonged. *Upperside*. Fore wing, ground colour more creamy white, the base of the costa and base of cell slightly brownish; the bar at the end of the cell not extending into area 3; the creamy spots in the black border, though variable in size and number, always clear. The dark mark of underside in the discal line may show through in 1b & 2. Hind wing ground colour creamy, slightly more buffish on inner fold, shading to brownish at the hinder part; the black border relatively wide and extending to the anal angle; the submarginal spots small, double at anal angle; the admarginal with rufescent angular spots, olive at anal angle; edge black; tail spatulate, black, with whitish mid line 10 mm in length. *Underside*. Fore wing, ground colour creamy, with some satiny patches, particularly on the border; base of cell brownish black, a short blackish bar at mid point and a stronger bar at end of cell, extending into sub-bases of 3 and 2; postdiscal blackish bar strong, dividing into two at 4, the angle containing three white spots; border of wing brownish and the submarginal series of white spots complete from the subapex to 1a; submarginal series of smaller spots also complete. Hind wing, ground colour creamy, with satiny sheen; sub-base with a dark curved line; disc of wing crossed by a

darker bar and joining the inner arm of the 'Y' along the inner fold, at the lower end of which is a thin line crossing the fold. Border brownish, with a row of black lunules in the submarginal line; admarginal silvery white spots well marked, especially at the upper angle, accentuated by black distally; enlarged black mark at anal angle, flanked by olive and with lilac centre. Margin satiny brownish, edge black.

**FEMALE.** Fore wing length 32–36 mm. Shape as in nominate *zoolina*. *Upperside.* Fore wing, very similar in markings and greenish white ground colour to nominate *zoolina*, except that the dark bar at end of cell is slightly thinner and the two blackish spots situated mid way between cell bar and the dark subapical area are reduced in size, or sometimes obsolete. The pale submarginal spot in space 3 is only slightly larger than that in space 2 and has a straighter inner margin, so that the dark brown of the postdiscal line is less sinuous and tends to run parallel with the outer margin. Hind wing, as in nominate ssp. but the submarginal series of spots are more noticeably darkened inwardly. *Underside.* Compared with nominate *zoolina* the dark markings are darker. Fore wing, mid-cell bar irregular and tending to be broken in two. The spot in space 3 of inner submarginal series is only slightly larger than those in spaces 2 and 4 so that the brown line separating these spots from the disc is straighter and it extends beyond vein 1 towards the tornus. Immediately below vein 5 this brown line extends basad and tends to join with the postdiscal costal bar. Hind wing, the dark brown submarginal line tends to be broader and darker, with black lunules on its inner margin and with little indication of an internal series of paler spots.

**RANGE.** Confined to Madagascar.

### Form *betanimena* Lucas

(Pl. 8, figs 99 & 100; Map 5)

*Charaxes betanimena* Lucas, 1872: 3.

*Charaxes andriba* Ward, 1873: 210.

*Nymphalis freyi* Branczik, 1891: 161.

*Charaxes lambertoni* Lathy, 1925: 96.

**MALE.** Fore wing length 28–30 mm; shape as in nominate form, the margin of the hind wing with marked tooth at end of vein 4. *Upperside.* Fore wing, pattern also very similar but ground colour strongly suffused with ochreous; apex and outer border brownish black, the enclosed spots ochreous orange; the dark line at end of cell narrow. Hind wing, ground colour as fore wing, inner fold more buffish; border relatively wide, blackish at upper angle but shading to more rufous toward the hind angle; enclosed ochre-orange spots complete, edged with black distally; edge of wing more rufous; anal angle with olive ground carrying double black spots. Upper 'tail' clearly visible, 2 mm, lower tail 5 mm, slightly curved and spatulate at end. *Underside.* Fore wing ground colour cinnamon to rufous, paler on the border; costa silvery at base; pattern very faint except for a slight dark line in cell and the dark discal bar, edged white proximally; submarginal dark spots punctiform. Hind wing, ground colour as fore wing, pattern obscured except for the dark transverse discal line, white edged proximally, and extending from costa to hind angle; a slight indication of a dark line along vein 2 on the inner fold; submarginal line very faint, and admarginal dots almost obscured; anal angle olive with two black dots.

**FEMALE.** Larger than the male, 35 mm; shape, outer margin not so incised, but apex more 'cut-off', with lower angle more acute. *Upperside.* Fore wing, ground colour creamy with greenish ochre tinge; border brownish black and broad, enclosed pale spots, large beyond cell and in 3, but rest rather small; mark at end of cell narrow. Hind wing, ground colour as fore wing but shading to buffish on the inner fold; border relatively broad, brownish black; submarginal spots obscured, buffish in colour; admarginal spots paler and more distinct; edge rufous, turning greenish olive at anal angle. Tails spatulate at ends, upper 6 mm, lower

10 mm. *Underside*. Fore wing, ground colour pale to dark russet; pattern obscured except for the dark bar at end of cell and extending to hind margin at 1b; a row of blackish triangular marks in the postdiscal line, followed by obscure pale marks on submargin; margin of wing brownish, edge narrowly black. Hind wing, ground colour as fore wing, discal bar with white proximally, fairly strong, extending from costa to anal angle where it joins with the postdiscal line of more obscure dark spots; admarginal dark spots black becoming linear at tails, and more distinct; edge of wing slightly rufous.

RANGE. Confined to Madagascar where both forms are widespread; the nominate form seems to be the more abundant.

### *Charaxes kahldeni* Homeyer & Dewitz

(Pl. 8, figs 101–105; Map 5)

*Charaxes kahldeni* Homeyer & Dewitz, 1882 : 381.

MALE. Fore wing length 28–30 mm; shape, costa curved toward end, apex projecting, but end squared off; outer border incised, hind angle projecting slightly at 1b. Hind wing outer margin rounded but anal projection strong. *Upperside*. Fore wing, ground colour creamy, with greenish tinge, slightly satiny toward base; costa slightly brownish at base, black beyond. A small black spot at upper end of cell and another slightly larger at base of 6. Apex and border of wing black, enclosing a subapical white spot of varying size and a series of submarginal larger spots extending from the hind angle at 1b to 4, the lower spots only partially enclosed proximally. There is a slight indication of a dark line crossing the base of the wing from the cell to 1b, enhanced by the dark line of underside showing through. Hind wing, ground colour as fore wing, immaculate except for a very narrow blackish border at margin, and an indication of black lines in the admarginal line, the marks becoming spots with blue centres, double at anal angle on a buffish ground; single long tail with spatulate end of vein 2, 7–8 mm in length. *Underside*. Fore wing, ground colour as upperside, costa all black; pattern as upperside but stronger and darker, with an additional black dot conjoined to costa in cell, the bar beyond strongly represented, as well as a dark bar in the postdiscal line, but the marginal border not so black except at edge, admarginal series of linear marks not so strong but extending to subapex. Hind wing ground colour as fore wing, pattern strong but limited to a 'Y'-shaped mark, the inner arm extending from the base of the wing to mid-point 1c, the outer arm from mid-costa, through end of cell and joining the inner arm and continuing down the upper edge of the inner fold to the anal angle; an almost straight bar crosses the submarginal zone of the wing from the costa to the anal angle, which has the usual blue-centred black marks on an olive ground. Admargin with very fine dark line; edge blackish; tail mostly black.

FEMALE. Larger than the male, fore wing less incised on margin, end of apex square-cut. Hind wing not so angled at hind angle, but upper part of outer margin almost straight, ending in a projection at vein 4 to accommodate a second tail, the wing then tapers to the anal angle. *Upperside*. Fore wing, pattern limited to an indication of dark scaling at end of cell; the postdiscal dark line, though strong in the subapex, ends at 4, but is extended to 1b by the dark line of underside showing through; apex and margin blacker, wide at apex but tapering to 1b; the pale spot in the subapex free or conjoined to the submarginal ground colour. Hind wing, ground colour as fore wing, immaculate except for indications of the dark lines of underside showing through; edge narrowly black, the black extending up the tails; with additional admarginal black linear marks between tails and the anal angle, those at angle with lilac centres on a buffish olive ground. Tails spatulate upper 5 mm, upwardly curved, lower 8 mm, downwardly curved. *Underside*. Fore wing, ground colour as in the male, dark markings similarly placed. Hind wing, ground colour and markings as in the male but with an additional dark line on the bottom edge of the inner fold and joining with the base of the stalk of the 'Y'-mark, but leaving a long triangular whitish mark above the anal angle. Tails black.

Form *homeyeri* Homeyer & Dewitz

(Pl. 8, figs 104 &amp; 105; Map 5)

*Charaxes kahldeni* f. *homeyeri* Homeyer & Dewitz, 1882 : 382.

MALE. Fore wing length 26–30 mm; shape similar to nominate form, but outer margin sometimes more incised. *Upperside*. Fore wing, ground colour of base of wing and costa pale creamy with greenish tinge, shading into the orange of the distal half, where the only pattern noticeable is a dark spot at upper end of cell, a darker marginal border and an obscure submarginal line, the two lines enclosing obscured spots of the ground colour. *Underside*. Fore wing, ground colour pale rufous russet; costa silvery at base; the base of the wing crossed by a strong blackish bar, commencing at costa at end of cell and extending to upper part of 1b, proximally accentuated with a silvery white line. Hind margin of wing whitish; a series of punctiform blackish spots present in the postdiscal line, double in 1b, on veins. Hind wing, ground colour as fore; the only pattern is the dark 'Y' at basal half of wing as in nominate form, the inner arm less strong, the outer accentuated by a silvery line on the proximal side. A series of dark dots present in the submarginal line and punctiform dark dots on the admarginal, double at the anal angle where the ground colour is tinged olive.

FEMALE. Larger than the male, fore wing length 35 mm; shape, outer margin of fore wing less incurved and straighter, thus apex less acuminate. General coloration and pattern similar to that of the male, but hind wing with well developed tail at 4, with the marginal border between tails darker. *Underside*. Very similar to that of male, but ground colour and pattern stronger.

RANGE. Described from Angola, this species ranges north to the Cameroun, the Central African Republic, Republic of Congo and mid-Congo (Kinshasa) to western Uganda, overlapping with *Charaxes zoolina*.

## SYSTEMATIC LIST

*Charaxes zoolina* (Westwood)

- Charaxes zoolina zoolina* (Westwood, 1850). Type locality: Natal.  
Range: Natal, Zululand, Manicaland, Zambezi, Zambia, Rhodesia, Tanzania, Kenya, Uganda, southern Sudan, Ethiopia, Somali Republic.  
f. *neanthes* (Hewitson, 1854). Type locality: Natal.  
Range: As above.  
f. *homochrous* Le Cerf, 1923. Type locality: Lourenco Marques.  
f. *obscuratus* Suffert, 1904. Type locality: Mhonda.  
*zoolina ehmckeii* Homeyer & Dewitz, 1882. Type locality: Pungo Andongo, Angola.  
f. *phanera* Jordan, 1908. Type locality: N. Angola.  
Range: Angola.  
*zoolina betsimisaraka* Lucas, 1872. Type locality: Madagascar.  
f. *betanimena* Lucas, 1872. Type locality: Madagascar.  
Range: Madagascar.  
*zoolina mafugensis* Jackson, 1957. Type locality: Mafuga, Uganda.  
Range: Uganda, Kigezi District, high forests of Mafuga.

***Charaxes kahldenii*** Homeyer & Dewitz

*Charaxes kahldenii* Homeyer & Dewitz, 1882. Type locality: Pungo Andongo, Angola.

Range: Angola, Republic of Congo, Central African Republic, Cameroun, Congo (Kinshasa) to Uganda.

f. *apicalis* Röber, 1925. Type locality: southern Cameroun.

f. *homeyeri* Homeyer & Dewitz, 1882. Type locality: Pungo Andongo, Angola.

f. *bellus* Niepelt, 1914. Type locality: Cameroun.

Range: As above.

6. THE ***CHARAXES PORTHOS-ZELICA*** COMPLEX

The members of this complex form a compact group with a characteristic shape. The males are tail-less, but in some species the females have one well developed tail.

The first species of the group, *Charaxes laodice*, was described by Drury in 1782. In general shape and underside pattern, the species appear related to *Charaxes nichetes* Grose Smith and its subspecies, which occur in more open habitats and are tawny orange in colour.

Unfortunately, little or nothing is known of the early stages . . . ova, larvae, pupae and the food plants have not been recorded, so far as I know. When this information is forthcoming, it will show whether or not the present grouping is correct.

The species are confined to heavy forest, and the males are frequently noted sitting on some exposed twig, sunning themselves, in forest clearings.

***Charaxes mycerina*** Godart

(Pl. 9, figs 106-108; Map 6)

*Charaxes mycerina* Godart, 1824 : 369.

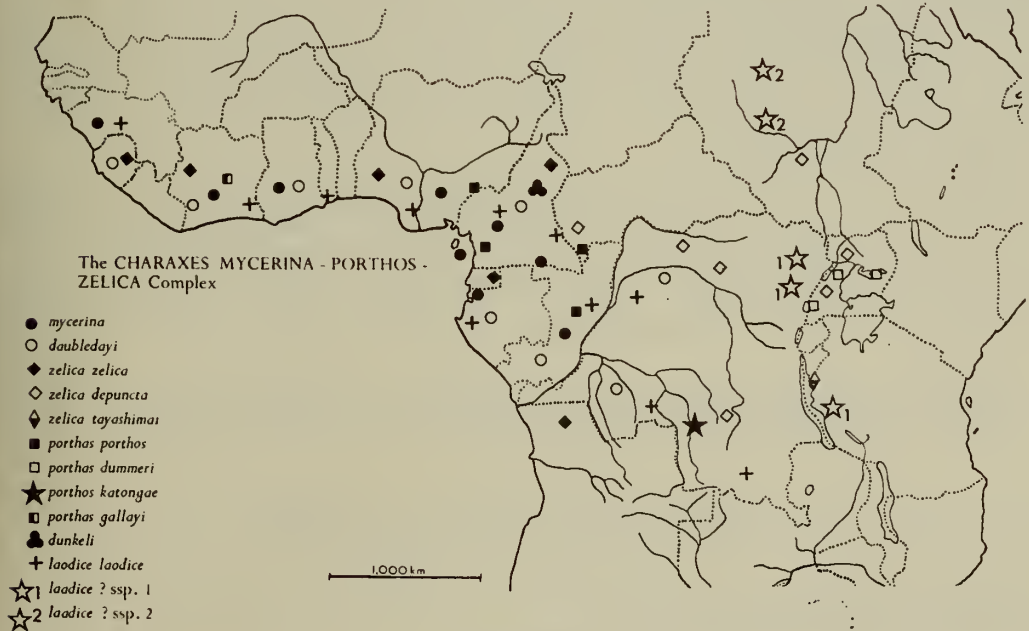
*Charaxes nausicaa* Staudinger, 1891 : 137.

MALE. Fore wing length 36-37 mm. Shape, apex tapering, but tip rounded; outer margin deeply concave at 3-5, and hind angle projecting at vein 2. *Upperside*. Fore wing, ground colour deep blue-black; cell almost entirely blue to its end, which is black; two elongate discal spots in contact beyond the cell, the upper smaller, followed by a postdiscal series arranged in a curve from 5 to hind margin in 1a, but no spot in 4, there may be a minute blue dot slightly off-set; the four lower spots increasing in size from 3, the mark in 1a, elongate. Hind wing, ground colour blue-black, shading to black on the inner fold. There is a minute white dot at the base of 5; the disc of the wing crossed by a series of blue spots of increasing size from subcosta at 6, more or less isolated, the others contiguous, stopping short at the inner fold. Submargin with minute blue dots in its lower half; margin with interrupted blue lunules from anal angle to 4. Outer border of wing rounded, but anal angle roundly projecting. *Underside*.

Fore wing, ground colour pale brownish grey, darker brownish on the curve of the outer margin. Disc of wing crossed by a darker blackish grey wedge-shaped band, widest at the costa and passing through end of the cell and the bases of cellules beyond, narrowing in sub-base of 2 and extending towards hind margin. This band is narrowly outlined in silvery white. The apex of the wing has a triangular dark patch extending from the costa to 3 and is outlined distally by a silvery line extending from the apex to 2; this line accentuates the dark border. Hind wing, ground colour as fore wing, the median bar slightly darker, outlined narrowly in black and white and crosses from the costa toward the inner fold, where it fades out. This is followed by a silver line dyslegnic on inner border but sharply defined by black distally, crossing the wing from costa to anal angle. This accentuates the darker browner zone between it and the satiny greyish outer border, which is narrowly edged with darker brownish. In between are a few white dots in the submarginal line; the dots at the anal angle are black.

**FEMALE.** Larger than the male, 39–40 mm. *Upperside.* Ground colour and pattern very similar but black less intense toward the base of the fore wing and along the costal area of the hind wing. The pattern of blue spots like that of the male, the blue in the cell less strong and mixed with black; the spots in the postdiscal line as in the male, the small spot in 5 often more distinct. Hind wing, pattern as in the male, the blue marginal lunules stronger both above and below the strongly developed tail at end of vein 4, which is robust with rounded end, 5 mm in length. *Underside.* As in the male; the dark triangular marks of the fore wing more satiny; the basal portion of the hind wing slightly paler; sub-base and discal zone with thin wavy black transverse lines; the darker browner postdiscal band straighter on its inner edge; the border darker, carrying a series of obscured pale spots in the submarginal line, separate at the upper end but contiguous from 5 to the anal angle. There is a suggestion of a 'tail' on edge at vein 2.

**RANGE.** Sierra Leone, Ivory Coast, Ghana, Cameroun, Central African Republic, Republic of Congo and western Congo (Kinshasa). Also recorded from the island of Fernando Po.



MAP 6.

*Charaxes doubledayi* Aurivillius

(Pl. 9, figs 110-111; Map 6)

*Charaxes doubledayi* Aurivillius, 1899 : 244.*Charaxes mycerina* auct. nec Godart, 1824.For full references *vide* Bryk, 1939 : 91.501.

This species is confusingly like *mycerina*, but can be distinguished by its larger size and the presence of a series of blue spots on the margin of the 'bay' of the fore wing.

MALE. Fore wing length 39-41 mm. Shape, fore wing costa strongly curved, apex bluntly pointed, emphasised by the strong concavity of the margin at 3-5 and the projection of the hind angle at vein 2. *Upperside*. Fore wing, ground colour deep blue-black; a large blue area occupies the basal 2/3rds of the cell of the fore wing, and beyond are two elongate blue spots, set at an angle, the upper one often small; a more oval spot is present in 6, sometimes with small blue dots above and below in 5, no spot in 4, but spots of increasing size are present in the postdiscal line, reaching the hind margin. Margin of wing within the curve with small blue spots reaching as far as 1b. Hind wing, ground colour deep blue-black, shading to blackish brown on the inner fold. The disc of the wing crossed by a strong blue band, widest in 1c on the edge of the inner fold, then tapering rather rapidly to the subcosta in 6 where the spot is often free. Margin with conspicuous blue lunules stopping short of veins 6-7. Anal angle slightly bluish. There is a slight indication of a tail at end of vein 4. *Underside*. Fore wing, very similar to that of *mycerina* but ground colour darker brownish grey; sub-base of wing crossed by a dark band, with a more distinct triangular band, outlined in white, widest at costal end, decreasing in width to the hind margin. Beyond, in the subapex is a triangular dark satiny patch, with irregular inner border which ends at vein 2 and is outlined distally in white. The concavity of the wing darker brownish black extending to the hind angle, bordered internally with obscure pale marks in the submarginal zone. Hind wing, ground colour as fore wing, an indication of a darker triangular band in the sub-base followed by a more conspicuous dark band externally bordered by a whitish brown line, which crosses from the costa to above the hind angle, which is bordered distally by a dark line shading into the dark border, which has obscure pale marks in the submarginal zone surrounding minute white dots; the margin darker brownish.

FEMALE. Larger than the male, fore wing length 43-45 mm. *Upperside*. Colour and pattern as in the male, but ground colour less intense blue-black, especially at the bases of fore and hind wings. The pattern of blue spots similar to that of the male on both wings, but blue border on hind wing more continuous, the blue extending up the well developed tail, which is 6 mm in length and blunt-ended. The anal angle is bluntly rounded, and there is also a slight projection at the end of vein 2. *Underside*. Very similar to that of the male but ground colour slightly paler brownish grey, especially on the hind wing, and the pattern of both wings is more distinct.

RANGE. Sierra Leone to the Congo (Brazzaville), including Cameroun, Central African Republic and Republic of Congo (Kinshasa).

*Charaxes porthos porthos* Grose-Smith

(Pl. 9, figs 112, 113; Map 6)

*Charaxes porthos porthos* Grose-Smith, 1883 : 57.*Charaxes midas* Staudinger, 1891 : 135.*Charaxes porthos porthos* Grose-Smith; van Someren, 1968 : 225.



**MALE.** Fore wing length 36–38 mm. Shape, fore wing costa rather curved, apex bluntly pointed, tip rounded; outer margin strongly concave in 3–5; hind wing rounded but anal angle slightly produced. *Upperside.* Fore wing, ground colour blue-black, usually with a blue subcostal spot beyond end of cell, which may be single or double. Wing crossed by a series of blue spots extending from the hind margin towards the subapex, the lower spots large and contiguous, those from 2–6 decreasing in size and separate. Border of wing immaculate. Hind wing, blue-black, shading to brownish on the inner fold. Disc of wing crossed by a series of contiguous blue spots of increasing size from subcosta towards, but not encroaching on, the inner fold. The submarginal zone with a series of white punctiform spots, triangular or rounded, with blue surrounds, the spots at the upper angle usually strongest, tending to decrease in size toward the anal angle. Margin with very narrow blue line, sometimes interrupted. There is a slight projection at the end vein 4. *Underside.* Fore wing, ground colour pale greyish brown, slightly darker at the base; a darker band crosses the wing, widest at costa passing through the apex of the cell and bases of 4–7, gradually decreasing in width toward the hind margin; the apical portion of wing also dark, more so in the 'bay' of the wing, and this is crossed by a dark line, shaded whitish proximally, almost straight from hind margin to vein 7, where it turns outward to the apex. Cell with two dark spots in sub-base. Hind wing, ground colour slightly paler than fore wing, with a slight indication of a dark band in discal line. The wing is crossed by a strong dark brownish line from the costa to above the anal angle; this line may be almost straight or sinuous, curving slightly at the inner fold. Submargin with a row of white or buffish white spots, strongest at upper angle, fading out toward the hind angle. Margin of wing with slightly darkened border from which faint dark rays extend inward to the white spots.

**FEMALE.** Fore wing length 43 mm. *Upperside.* Fore wing, ground colour black, costa slightly browner at base. A small elongate blue mark beyond the end of cell and a subcostal streak beyond. The wing is crossed by a series of blue spots extending from the hind margin to the subapex in an almost straight line, thus further from the margin than in the case of the male. Hind wing discal spots blue, forming a band of increasing width from the costa to short of the inner fold. Submarginal blue spots strong in the upper angle but reduced in size and fading out toward the anal angle where the spots are small and double. A well developed though thin tail with rounded end, at end of vein 4. Margin with continuous blue line above and below the tail. *Underside.* Very similar to that of the male, but hind wing paler.

The female neallotype is from the Central African Republic at Bangui, January 1967 (*Minig*), in Coll. Plantrou. Paris.

**RANGE.** Cameroun, Central African Republic, Republic of Congo (Kinshasa), Gabon, and North and Central Congo (Brazzaville).

### *Charaxes porthos katangae* Rousseau–Decelle

(Pl. 9, figs 114 & 115; Map 6)

*Charaxes porthos katangae* Rousseau–Decelle, 1931 : 87.

Known only from the holotype male. The species was not recorded by Overlaet, 1925, *Explor. du Parc Nat. de l'Upemba*, Fasc. 27.

**MALE.** Fore wing length 40 mm. Shape similar to *porthos dummeri*. *Upperside.* Fore wing, ground colour blue-black, slightly paler on the outer margin, which carries two white spots at the apex. A blue spot beyond the end of the cell with a trace of a minute one above. The series of blue spots crossing the wing from about mid hind margin, is rather sinuous, the two spots in 1b being set in somewhat, those in 2–3 4–5 in a slight curve, the two upper spots small. Hind wing, ground colour blue-black, shading to brownish on the inner fold. The band of contiguous blue spots crosses the disc from just short of the inner fold, through the apex of the

cell and represented in the costa by a separate spot. Bluish white spots on submargin strong at the upper angle, fading out below, double at anal angle. Margin with a continuous line of blue, interrupted only by the dark veins. The anal angle is rather pointed. *Underside*. Very similar to the pale form of *porthos dummeri*. Fore wing, the dark line crossing the wing is strong, ending in a whitish area at the apex; dark lines at right angles to this line present on proximal side in 1b and 2. Hind wing, ground colour paler than *dummeri*, the darker zones in sub-base very faint; but the dark line crossing the wing from costa to above the anal angle is strong, and almost straight with an indication of faint whitish loops on the proximal side. Submargin with a series of white dots, strong at upper angle but small and faint to anal angle. Margin of wing slightly brownish.

RANGE. South-eastern Congo (Kinshasa) in the Katanga area.

### *Charaxes porthos dummeri* Joicey & Talbot

(Pls 9 & 10, figs 109, 116, 117; Map 6)

*Charaxes porthos dummeri* Joicey & Talbot, 1922 : 338.

*Charaxes porthos dummeri* Joicey & Talbot; van Someren, 1957 : 177.

*Charaxes porthos dummeri* Joicey & Talbot; van Someren, 1968 : 224.

MALE. Fore wing length 37–40 mm. Shape similar to other races, apex rather rounded. *Upperside*. Fore wing, deep blue-black. The blue spot beyond the end of the cell, consisting of a large central spot with smaller ones above and below, unusually large. The series of blue spots crossing the wing from the hind margin to the subapex usually strong and bolder than in nominate *porthos*, widest from 1a–2 and contiguous, diminishing in size and well separated to 6, arranged in a slight curve. Apex of wing with slight indication of pale off-white triangles. Hind wing, ground colour blue-black, duller at costa and dull black on the inner fold. The series of blue spots commencing at the costa increase in size toward the inner fold, that on the fold less strongly blue. Submargin with series of white dots, conspicuous at upper angle, which become small and somewhat obscured below, double at anal angle. Margin with narrow continuous blue line fading out at 6. *Underside*. Fore wing, ground colour ashy brownish grey, but shading to more brownish on the border, especially in the 'bay' of the wing. Obscure dark bands present at the base and in the discal zone and through the mid areas of 4–6, the apex of the wing slightly whitish. The cell with two dots. The blackish brown line strong, crossing from the hind margin to 6 in an almost straight line, bends sharply to the apex. Two obscure pale spots sometimes present at the tornus. Hind wing, ground colour as fore wing, the basal area with faintly indicated darker bands narrowly edged in black. The dark bar strong, crossing from costa to above anal angle accentuated on proximal side with whitish. Submargin with punctiform white spots, most apparent at the upper angle, double at anal angle. Margin of wing slightly browner.

FEMALE. Very like the male, but slightly larger, length of fore wing 42 mm. Hind wing with a longish tail at end of vein 4, 5 mm in length. *Upperside*. Fore wing blue-black, slightly brownish at base and along costa. Pattern of blue spots bolder than in the male, but blue less intense; the line of spots curving gently from 2–5. There are minute spots in the submargin of the tornus. Hind wing more rounded at hind angle than in the male, but tail well developed. Discal blue band crossing the wing wider than in the male, ending more abruptly at the inner fold. Submargin with a row of well developed bluish white spots; margin with a continuous blue line from anal angle to 6. *Underside*. Ground colour very similar to that of the male, the dark bar on the hind wing stronger and broader, and the white spots on the submargin more distinct.

RANGE. Uganda, mainly in the forests around Lake Victoria; north-western Kenya, Kamengo, Katera and Mabira.

*Charaxes porthos gallayi* van Someren

(Pl. 10, figs 118-121; Map 6)

*Charaxes porthos gallayi* van Someren, 1968 : 223.

**MALE.** Fore wing length 33-36 mm. Shape similar to that of other races but hind angle of fore wing projecting slightly more at 1b-2, so that the marginal curve toward the apex appears deeper. *Upperside.* Fore wing, pattern of blue spots very similar to that of *porthos dummeri* but the small upper spots of the postdiscal line more extended and curving toward the costa; the spot beyond the end of the cell not so large as in *dummeri*. Hind wing, blue band wider in the mid area at end of cell, the spot at costal end separate. The submarginal white spots are very small, except the two at the upper angle. The anal angle is rather more pointed, and there is a suggestion of a rudimentary 'tail' at end of vein 4. *Underside.* Fore wing differs from the nominate race and also from *dummeri* by the absence of the dark brownish line which separates the basal area from the dark border in the distal curve of the wing. On the hind wing the dark line is also reduced in intensity and is slightly more curved inward than in other races. The submarginal white spots are obscured except those at the upper angle.

**FEMALE.** Fore wing length, 40 mm. The apex of the wing more falcate, but the tip is 'squared-off'. *Upperside.* Fore wing, there are two blue spots beyond the end of the cell. The blue spots in the postdiscal line are similar to that of the male. Hind wing, blue band is wider toward the inner fold, decreasing in width toward the costa. The submarginal bluish white spots well developed, as also is the blue line on the margin. A strong tail is present at the end of vein 4, 4-5 mm in length, and a rudiment-'tail' on vein 2. *Underside.* Fore wing ground colour and pattern as in the male, with the entire absence of the dark line usually noted in this species. On the hind wing, the dark line is moderately strong and straighter than in the male. The submarginal white dots present, but obscured, except for the two at upper angle. Edge of wing slightly brownish. (N.B. The dark patches at the bases of the wings in the plates are due to stains.)

The holotype male and allotype female, taken on the Ivory Coast at Divo, are deposited in the Paris Museum. Other specimens in Plantrou coll., Paris.

**RANGE.** Ivory Coast.

*Charaxes zelica zelica* Butler

(Pls 10 &amp; 11, figs 122-126, 131; Map 6)

*Charaxes zelica zelica* Butler, 1869 : 28.

The distribution of the nominate race appears to be uncertain, as the locality of the type is given as Ashanti with a query. Talbot (1921 : 69) records the typical form as present in Sierra Leone, basing his observations on the male specimen then in the Hill Museum, and now in British Museum. I have before me four male examples from the Ivory Coast, and these, on locality, should be referred to the nominate race.

**MALE.** Fore wing length 35-36 mm. Shape, apex not unduly produced and tip rounded; outer margin not strongly incised and hind angle not projecting, but hind wing of similar shape to others of the group with rather pointed anal angle. *Upperside.* Fore wing, ground colour blue-black; blue spots limited to a series in the discal line arranged in a gentle curve, commencing with two longitudinal subcostal spots, followed by more vertical spots in 1b-3, that on the hind margin in 1a a streak, set in a little. A single spot in 6 just short of the mid point. Hind wing, ground colour blue-black, with a series of blue spots in an almost straight line

commencing at the upper angle and extending to above the anal angle; all spots discrete. Submargin with a series of punctiform or triangular bluish white spots complete; margin with an interrupted series of blue lunules complete or most marked toward the hind angle. *Underside*. Fore wing, ground colour drab greyish brown, with a darker pattern of obscured bands, one at sub-base of fore wing, followed by a bar in the discal line, widest at costa and tapering toward the hind margin; a darker band, wide at the costa, tapering toward the hind margin, accentuates the paler border from apex to hind angle, the junction bordered distally by obscure paler lunules extending from hind angle to apex. A conspicuous double brownish mark in 1b is a characteristic feature. Hind wing, ground colour as fore wing, the basal pattern obscured, but a dark band, widest at the costa then tapering slightly, crosses wing to above the anal angle and distal to this is a pale line, distally shaded in darker brown, strong at the hind angle then fading out toward the upper angle. The submargin is paler and carries a series of punctiform white spots with black distally, double at anal angle; edge of wing narrowly buffish.

FEMALE. Appears to be still unknown.

RANGE. Sierra Leone to Ivory Coast and Ghana.

Specimens from Nigeria and Cameroun and the Central African Republic at Bangui appear to be transitional toward *depuncta* (Pls 10 & 11, figs 125 & 131).

### *Charaxes zelica cline*

MALE. The main difference is one of size, the Cameroun insects measuring 39–42 mm in fore wing length. The blue spots on both fore and hind wings are slightly smaller and there is no blue on the margin of the hind wing. The ochreous spot in underside area 2 is small. Associated with these males is a female specimen from Bangui (Plantrou Coll.) which merits description and comparison with the female of *depuncta* of Uganda.

FEMALE. Fore wing length 42 mm. Shape as in the male, but apex less pointed. *Upper-side*. Fore wing, ground colour blue-black. Blue spots limited to two spots in 1b and one each in 2 and 3, all small. Hind wing, ground colour as fore wing, the blue spots in the post-discal line smaller than in *depuncta*, that at costa a pinpoint, the next three larger and more rounded, followed by three linear marks, that above hind angle obscured. Submargin with punctiform white dots complete; edge bluish white to vein 6. *Underside*. Fore wing, pattern of dark zones obscured except for that on postdiscal zone, accentuated distally by the paler border with its obscure pale linear marks. No ochreous mark in space 2. Hind wing, ground colour as fore wing, pattern obscured except for the pale transverse line bordered on either side by darker areas, wider than in *depuncta*. Submargin with obscured pale marks with white dots. Edge of wing pale.

RANGE. Cameroun and Central African Republic? Republic of Congo and western Congo.

### *Charaxes zelica depuncta* Joicey & Talbot

(Pl. 11, figs 127–130; Map 6)

*Charaxes zelica depuncta* Joicey & Talbot, 1921 : 69.

This race was based on a male specimen from the Mabira Forest, Uganda, and a photograph of the holotype is given. It will be noted that the specimen is old and very worn and lacks some of the characters given in the description, which was apparently based on other specimens mentioned as from French Congo, Cameroun.

The original description is as follows:—'Distinguished from the typical form by the absence of the blue marginal dots on the hind wing. The inner edge of the distal area of the underside is less curved on the fore wing and almost straight on the hind wing. In cellules 1b & c of the fore wing, is a pale ochreous patch distal to the postdiscal line, and generally a similar patch proximal to the discal line. The submarginal line on the fore wing ends at the apex; in the typical form it ends at vein 8'.

From the photograph of the type, it will be noted that there are blue dots on the (sub)margin of the hind wing upperside and some blue on the edge. The ochreous patches on either side of the discal (dark) band are absent, though present in other specimens; from Uganda, such as is figured on Pl. 11, figs 128 & 129.

As I have pointed out, specimens from Uganda are larger than nominate *zelica*, the fore wing measurements of a series being 39–42 mm in the males. The upperside fore wing blue spots are larger, and those of the hind wing also larger; the marginal blue lunules on the hind wing may be obsolete or limited to those toward the hind angle. The underside ground colour is rather browner and more satiny; the dark bands strong. The ochreous mark in 1b of the fore wing usually well developed.

FEMALE. I described this (1957 : 177) as follows:—'Very similar to the male in coloration but fore wing longer and generally wider, apex more rounded. Length of fore wing 45 mm. The blue spotting is duller and small, especially those of the hind wing.' Submargin of wing with well marked white spots; admargin only blue in region of hind angle. 'Underside as in the male, but duller and (often) lacking the two ochreous marks in 1b of the fore wing.'

RANGE. Forests in east, central and western districts of Uganda.

### *Charaxes zelica* subsp.?

I give a photograph of an interesting specimen from Katanga, taken at Kafakumba, S. Congo, by Dr C. H. McCleery. It is said to be a male, but it bears a very strong resemblance to the female of *zelica depuncta* (Pl. 11, fig. 131) above, but the underside is somewhat different. More specimens are required, before it can be satisfactorily allocated.

### *Charaxes zelica toyoshimai* Carcasson

(Pl. 11, fig. 132)

*Charaxes zelica toyoshimai* Carcasson, 1964 : 65; 1966 : 23.

MALE. Fore wing length 39 mm. Shape very similar to *depuncta*. *Upperside*. Fore wing, ground colour blue-black with a stronger greenish blue basal sheen. Blue spots in fore wing similarly placed but larger. Hind wing, ground colour as in other races but spots larger and more elongate. Spots on the submargin larger and more distinct, as a rule, and mostly blue, except those in 3–4; marginal blue linear marks strong in some specimens, weak or absent in others. The type, which is an exceptionally well marked specimen, was taken in the Mukuyu forest at the north-east end of Lale Tanganyika, and is deposited in the British Museum (Nat. Hist.) *Underside*. Described as being similar to the nominate race but fore wing rather browner, the postdiscal band being particularly strong toward the apex, so that the whitish line on the proximal side of the border is better marked. The pale area has a series of whitish

lunules distally shaded in greyish. There are two whitish spots in the sub-base of the cell. Hind wing, the dark band in the disc not well marked but that in the postdiscal zone wide at the costal end and divided by a whitish line, tapers toward the hind angle, accentuated distally by a pale area in lower submargin which carries a series of white dots distally accentuated by black linear marks.

FEMALE. Unknown.

RANGE. So far only recorded from the north-east end of Lake Tanganyika in the Kigoma district, Tanzania.

### *Charaxes laodice* (Drury)

(Pls II & I2, figs I33-I39; Map 6)

*Papilio Nymphalis Phaleratus laodice* Drury, 1782 : 34.

= *nesiope* Hewitson, 1876 : 3(1), pl. 45.

= *Papilio Nymphalis lycurgus* Fabricius, 1795 : 67.

*Palla laodice* (Drury); Kirby, 1871 : 274.

*Charaxes laodice* (Drury); Aurivillius, 1894 : 312.

MALE. Fore wing length somewhat variable; Rothschild gives the length as 33-38 mm. In the series before me the average length is 32 mm, but one specimen from Coquilhatville, mid Congo River, measures 38 mm. The Ivory Coast specimens are all small. Shape of fore wing, costa rather curved, apex falcate, but tip 'squared off', outer margin deeply concave at 4-5, hind angle, produced at vein 2, apex rounded. *Upperside*. Fore wing, ground colour deep blue-black; a blue spot at subcosta beyond the end of the cell; a single blue spot in the sub-apex, followed by spots of increasing size in the submargin from 3 to 1b, the mark in 1a small, or a streak. Hind wing, ground colour as fore wing, paler on the inner fold; disc of wing immaculate but blue band on submargin well developed, the distal edges of the spots almost straight, the inner more irregular as some of the spots are angled, the spot at the upper angle, if present, usually small; admargin of wing with interrupted blue lunules, most pronounced in the mid area. There is a suggestion of a rudimentary tail at end of vein 4. Anal angle produced but apex rounded. The specimen from Coquilhatville is boldly marked on the hind wing, and the spots on the fore wing are bold. *Underside*. Fore wing, ground colour satiny lead-black crossed by darker bands, a short band in the sub-base followed by a stronger band in the discal line; a somewhat triangular dark area, base toward costa, is bordered proximally and distally in paler lead-grey and whitish, the latter extending into the apex of the wing and accentuating the dark colour in the 'bay' of the outer border of the wing. Two black spots, outlined whitish present in sub-base of cell. Within the hind angle is a series of obscured, dyslegnic rufous spots in a half circle, fading out toward the apex. Hind wing, ground colour as fore wing, basal area crossed by a darker brownish black bar, widest at costa and tapering toward the inner fold, this is followed by a less dark band which joins the first. The wing is crossed by a dark brownish black band, widest at the costa and tapering to above the hind angle; this band is enhanced proximally by a pale line and distally by the satiny lead-grey-black border which carries small white dots in the sub-marginal line; edge of wing dark brownish black, often with extensions on proximal side toward the white dots, particularly in the region of the hind angle; extreme edge of anal angle greenish. This description of western examples, is given in some detail for comparison with specimens from Kigoma and Nuba Mts referred to later.

FEMALE. Larger than the male, fore wing length 40-45 mm. Shape very similar, but apex more produced and concavity on outer margin deeper. *Upperside*. Fore wing, ground colour of fore wing duller black, sometimes brownish black. Pattern of blue spots as in the male but submarginal spots toward hind angle smaller and more linear. Hind wing, ground colour as fore wing, duller on inner fold. Border of wing strongly rufescent brown, separated

from the black of the disc by a series of blue lunules extending from above the anal angle to 5, and a small spot in 6. Submargin with obscure white dots, double at anal angle where they are distally edged with black. Tail at end of vein 4 well developed, short, robust with rounded end, 5 mm in length. *Underside*. Fore wing, ground colour more brownish than in the male, the pattern more obscured. Hind wing similar, but dark band moderately strong, with distal edge rather irregular due to projections along the veins. Submarginal spots small or obscured; marginal border brownish, this colour extending up the tails.

**RANGE.** The nominate race ranges from Sierra Leone, Ivory Coast, Ghana, Nigeria, Cameroun. Republic of Congo and Gabon & Congo. Also recorded from Fernando Po.

*Charaxes laodice* subsp. 1?

(Pl. 12, figs 137-138; Map 6)

Male specimens I have examined from the Kigoma district, north-east of Lake Tanganyika are smaller and average 31-33 mm. The blue spots of the fore wing larger, those beyond the end of the cell usually double. The blue spots on the hind wing less separated by dark veins and the marginal lunules more developed. The outer margin of the fore wing less concave. On the underside the ground colour is darker and the pattern less obvious; the brown of the hind angle more extensive. Hind wing with similar suppression of pattern but dark band strong; the marginal border more rufescent.

Carcasson (1966 : 56) figures a very boldly marked specimen of a male, with two large subcostal blue spots beyond the end of the cell in the fore wing, and the submarginal spots are also large. On the hind wing the submarginal spots are equally large and coalescent at the lower part of the series; the marginal lunules also very large, that in 6 conjoined to the submarginal spot in the same area.

A very similar insect is found in the Bwamba Valley in western Uganda.

*Charaxes laodice* subsp. 2?

(Pl. 12, figs 137-138; Map 6)

I have also examined an interesting male specimen from the Nuba Mountains, south-west of El Obeid, Sudan (Pl. 12, fig. 139), which also had bold blue spotting in the fore wing, where the submarginal series extends to 6. The hind wing submarginal spots and those on the admargin are equally bold. The underside is very dark, the pattern obscured. The border of the hind wing is chestnut.

More specimens are required before this insect can be placed satisfactorily.

*Charaxes dunkeli* Röber

(Pl. 12, fig. 140; Map 6)

*Charaxes dunkeli* Röber, 1939 : 357. Type locality, Cameroun.

This very distinct species belongs to the *Ch. mycerina-porthos* complex but presents some distinctive features both above and below. It appears to be very

rare in collections. I am indebted to Monsieur Jacques Plantrou for photographs of a specimen in his collection.

I quote a translation of the original description: 'Comes closest to *porthos* Smith, from the Camerouns, . . . and *katangae* Rousseau-Decelle. Above, the outline (shape) of the wings is almost identical, but the indentation on the outer margin of the fore wing is more distinct. The band of blue spots on the fore wing has no greenish tinge, and consists of three larger spots between the inner margin and the second branch of the median vein, separated only by black veins, and the posterior radial vein. There is no similar spot at the end of the median cell. The blue median band of the hind wing is more narrow and cut off in an almost straight line at both ends. The bluish-white submarginal dots are more distinct. The underside surfaces of both wings resembles that of *porthos* but shows enough differences . . . that *dunkeli* can be considered as specifically distinct. The brown submarginal band of the front wing is lacking, but the markings on the proximal parts of the wing are very distinct, the median band consisting of seven crescentic-shaped spots, each about 1 mm broad and terminating in white on both sides. At the end of the marginal cell there is a large bluish-greenish-blackish speckled spot and between this and the base of the wing can be seen a large black spot of the same width as the median cell. Proximal to this there are two small confluent spots surrounded by bluish grey. The distal continuation of the big black spot is made up of two black spots surrounded by greyish-blue. The colour of the hind wing is lighter, much the same as the front wing but with more of a silky sheen, and the dark median band is less jagged. Type male, wing spread 65 mm. Named after its discoverer G. Dunkel.'

The specimen in the Plantrou collection differs only in minor details; the fore wing blue bar is extended into cellule 3, where there is a slight blue streak; the hind wing band is also extended toward the costa. There is a rudimentary 'tail' at the end of vein 4.

DISTRIBUTION. Known only from the Cameroun.

#### SYSTEMATIC LIST

##### *Charaxes mycerina* Godart

*Charaxes mycerina* Godart, 1824. Type locality: Sierra Leone?

Range: Sierra Leone, Ghana, Nigeria, Cameroun, Fernando Po, Congo (Kinshasa) including Kasai, Gabon, Central African Republic, Republic of Congo.

##### *Charaxes doubledayi* Aurivillius

*Charaxes doubledayi* Aurivillius, 1899. Type locality: Sierra Leone.

Range: Sierra Leone, Togo, Nigeria, Cameroun, Gabon, Central African Republic, Republic of Congo (Kinshasa), Congo (Brazzaville).

##### *Charaxes porthos* Grose Smith

*Charaxes porthos porthos* Grose Smith, 1883. Type locality: Cameroun.

Range: Cameroun, Central African Republic, Republic of Congo (Kinshasa), Congo (Gabon, Brazzaville) excluding Katanga.



*porthos katangae* Rousseau-Decelle, 1931. Type locality: Katanga.  
Range: Southern Congo (Kinshasa), Katanga district.

*porthos dummeri* Joicey & Talbot, 1922. Type locality: Uganda, Mabira Forest.

Range: Uganda generally, and north-west Kenya.

*porthos gallayi* van Someren, 1968. Type locality: Ivory Coast.

Range: Ivory Coast.

### *Charaxes zelica* Butler

*Charaxes zelica zelica* Butler, 1869. Type locality: Ashanti.

Range: Sierra Leone, Nigeria, Cameroun, Gabon, N. Angola.

*zelica depuncta* Joicey & Talbot, 1921. Type locality: Uganda.

Range: Uganda, Congo (Kinshasa), Katanga, Central African Republic, southern Sudan.

*zelica toyoshimai* Carcasson, 1964. Type locality: Tanzania, Kigoma district, north-east Lake Tanganyika.

Range: Only known from type locality.

### *Charaxes laodice* (Drury)

*Charaxes laodice* Drury, 1782. Type locality: Sierra Leone.

Range: Sierra Leone, Ivory Coast, Ghana, Nigeria, Cameroun, Fernando Po, Gabon, Central African Republic, Republic of Congo, northern Angola, Congo including Katanga.

*laodice* subsp. 1?

Range: Tanzania, Kigoma district north-east Lake Tanganyika, Uganda in the Semliki and Bwamba Valleys.

*laodice* subsp. 2?

Range: Sudan, Nuba Mts.

### *Charaxes dunkeli* Röber

*Charaxes dunkeli* Röber, 1939. Type locality: Cameroun.

Range: Cameroun.

## 7. *CHARAXES NICHETES* GROSE-SMITH AND ITS SUBSPECIES

We come now to an outlying member of this 'group', which has a different biotope: valley-forest, woodlands and heavy savannah; the dominant colours are tawny rufous and black.

### *Charaxes nichetes nichetes* Grose-Smith

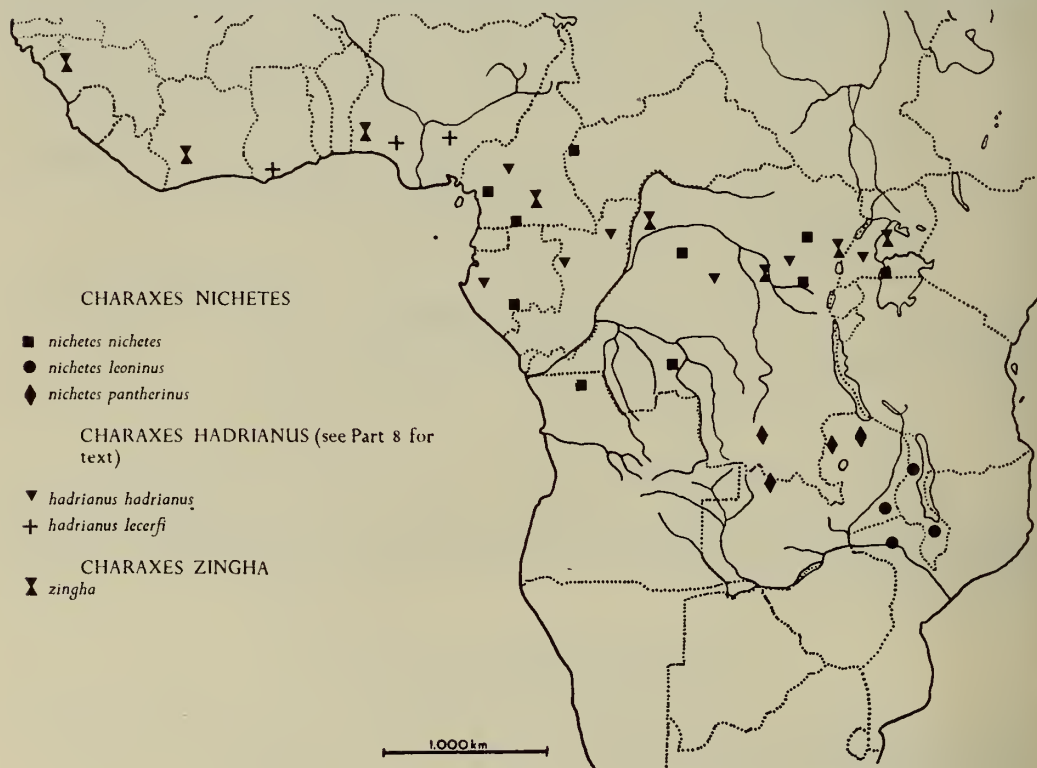
(Pl. 12, figs 141-144; Map 7)

*Charaxes nichetes nichetes* Grose-Smith, 1883 : 50.

*Charaxes hamatus* Dewitz, 1884 : 285.

*Charaxes ogovensis* Holland, 1886 : 330.

**MALE.** Fore wing length 35–38 mm. Shape, costa curved toward apex, apex produced, tip rounded, outer margin concave from 3 to 5, hind angle produced at 1b but angle squared. *Upperside.* Fore wing, basal area orange-chestnut, with a strong purplish tint in side-light, the rufescent colour shading to black beyond, the black sharply defined from the rufous-orange border. The pattern consists of a small black spot in upper part of mid cell and a larger one at its end; in the discal line are two large rounded black spots in sub-bases of 5–6 and similar spots in sub-bases of 3 & 2, the two upper spots at an angle to the blacker series of conjoined angled marks of the postdiscal line, which runs from the costa to the hind margin, the upper spots of these two rows separated by an orange mark; the outer ends of these angled marks have extensions along the veins, which tend to separate the submarginal series of paler rufous-orange spots, which extend from the costa to the hind margin in increasing size, the marks in 4–6 uniform in size. The apex is rufous tawny; the marginal border of the wing, especially in the 'bay' is blackish. Hind wing, basal area black with a large tawny-orange patch at the costa, thus dividing the base of the black triangle, which tapers rapidly toward the hind angle. The inner fold is buffish at its basal half, but more rufous at its end. The black area is sinuate on its outer edge, with rays which tend to separate the postdiscal series of rufous-orange spots, especially in the mid area, of which the upper spots are of about equal width but those below the apex of the cell decrease in size to the hind angle. Beyond is a submarginal row of blackish spots with tawny orange enclosed spots, the black spots may be rounded and separate in the upper segment or conjoined. The border of the wing is tawny orange with the extreme edge darker with slight white fringe in the region of the slight projections of the lower veins. *Underside.* Basal portion of fore and hind wing, up to the dark transverse line rufescent greyish with a slight purplish tinge. Within the dark areas are darker rufous rather obscure 'ring' marks with large centres in the discal line and beyond in the subcostal region. On the line



MAP 7.

of junction between the basal area and the more rufescent border of the wings is a zigzag line of contiguous triangles, accentuated in greyish, the mark on the apex is whitish. The border of the wing is more rufescent, the edge being darker chestnut-brown. On the hind wing there is a series of small whitish or lilac spots accentuated distally with black, double at the anal angle. The border of the wing is rufescent.

**FEMALE.** Larger than the male, fore wing length 42–44 mm. The apex is more extended than in the male. *Upperside.* Fore wing, general colour and pattern like that of the male, but markings larger, the discal and postdiscal black spots tending to merge, but the submarginal tawny-orange spots are more discrete. Hind wing, the tawny-orange band is more restricted on the distal side by an increase in the width of the dark area beyond, but in some specimens the series of pale marks on its distal side are conspicuous; the marginal border is tawny-orange. Many specimens exhibit a distinct rudimentary tail at the end of vein 4. *Underside.* Very similar to that of the male but rather paler, especially on the outer border of both wings. The dark markings are slightly more apparent, especially the dark line which runs through both wings, commencing more proximad at the apex and is curved in 1a–1b of the fore wing.

The foregoing descriptions are taken from specimens from Coquihatville, Congo and from Bugalla Is of the Sesse group in Lake Victoria, Uganda. It will be seen from Pl. 12, figs 143–144 that the latter specimens are more boldly marked.

**RANGE.** Cameroun, Central African Republic and Republic of Congo, Gabon and northern Angola and the Kasai district and northern Congo, eastward to Lake Victoria in Uganda, where the species has been taken on the Sesse Islands and in the lake-forests of Entebbe. There are no records from western Uganda that I know of.

### *Charaxes nichetes leoninus* Butler

(Pls 12 & 13, figs 145–147; Map 7)

*Charaxes nichetes leoninus* Butler, 1895 : 255.

**MALE.** Fore wing length, 38–40 mm. Shape similar to the nominate race. *Upperside.* Fore wing coloration much paler, more tawny orange, but still retains the purplish sheen, and the pattern of dark marks greatly reduced and not so black. Hind wing, the dark discal line is not extended basad. The underside coloration is also paler and the dark cross line is almost obsolete.

**FEMALE.** *Upperside.* Fore wing, the ground colour is also paler but the pattern of dark marks, though reduced, stands out more clearly. Hind wing, the series of dark spots with pale centres gives greater character to this zone. *Underside.* Ground colour is considerably paler than in the nominate race and the transverse dark line is thinner.

**RANGE.** Malawi and adjacent Zambia, particularly east of the Loangwe Valley. There is some evidence of intergrading between this race and *pantherinus* of the Katanga area of southern Congo (Kinshasa), on the borders between the two countries.

### *Charaxes nichetes pantherinus* Rousseau-Decelle

(Pl. 13, fig. 148; Map 7)

*Charaxes nichetes pantherinus* Rousseau-Decelle, 1934 : 234.

**MALE.** Fore wing length, 34–37 mm. *Upperside.* General coloration and pattern nearer to *leonina* than to the nominate race. Fore wing, ground colour bright orange rufous; black

spots on proximal side of postdiscal line well separated, though variable in size; postdiscal dark bar serrate on borders, extending from hind border to subapex; submarginal dark spots complete. Hind wing, ground colour as fore wing; dark bar continuous with that of fore wing but fading out on inner fold. Submarginal row of dark rings complete from upper angle to anal projection. *Underside*. Fore wing dull rufous in ground colour, with obscure dark spots in basal area; postdiscal crossed by a narrow, almost straight dark line, extending from subapex to anal angle, bordered distally by a satiny zone margined distally by a rufous line; border of wings satiny, but edge rufous.

**FEMALE**. Fore wing length 40 mm. Shape similar to that of male. *Upperside*. Ground colour paler, more yellowish. Pattern similar to that of male but more distinct and bolder. *Underside*. Paler and duller than in the male but basal marks and postdiscal in an almost straight line crossing both wings, more distinct.

**RANGE**. South-east Congo (Kinshasa), in the Katanga Province at Kafakumba, extending into the Kigoma area and in north-west Zambia.

### *Charaxes zingha* (Stoll)

(Pl. 13, figs 149-151; Map 7)

*Papilio Nymphalis Phaleratus zingha* Stoll, in Cramer, 1780, 53, T. 315.

*Papilio phaleratus berenice* Drury, 1872 : (3) 13.

**MALE**. Fore wing length 34-38 mm. Shape of fore wing, apex rather rounded, as also the hind angle, and outer margin almost straight. Hind wing outer margin rounded, but anal angle produced as a stumpy tail with an outward curve, the margin above tail slightly dentate. *Upperside*. Fore wing, ground colour black, base of costa rufous; base and disc of wing with a large reddish orange area filling the base of the cell, slightly more than the basal half of 1a & 1b, gradually tapering to 4, with two smaller spots in 5, sometimes with a trace of a spot in 6, the two upper spots more orange. There is often a trace of a dark spot at the base of the cell, two black spots at mid-point and a black spot sub-basal in 3. The outer margin of the orange-red area 'toothed' in 3-4. In some specimens the orange-red encroaches into the black of the mid subcostal area. Hind wing mostly black, with a reddish orange basal triangle with slight extension along the costa in 6. Inner fold brownish at base, shading to black on distal half. Border of wing thus broadly black but with conspicuous small orange-red spots in 3-2, continued as white spots at anal angle and on the inner fold; the angle with two larger conspicuous orange spots. The admarginal with larger reddish orange spots increasing in size from 3-6; edge of wing black with slight white fringe in region of tail. *Underside*. In contrast to the simple pattern above, the lower surface presents a complicated pattern of black spots and lines. Fore wing, basal portion ochreous-pink to ochre-red, the distal portion, from upper part of cell to apex and cellule 3, pinkish grey, paler on hind border. The cell carries conspicuous rounded black spots, one at base of costa, one at base of cell, two in sub-base, two or three in subapex, free, or often conjoined, followed by a black bar at end of cell and bases of cellules beyond; there is a less strong bar in discal line in cellules 5-7, with larger bold black spots in sub-bases of 2-3; and in the postdiscal line, a similar greyish bar crossing cellules 3-7, with stronger, blacker star-mark in 2. The pale greyish apical half of the wing is rayed with black along the veins and middle of cellules, running parallel to each other from the end of the cell to the margin. The submarginal zone has obscure dark spots, becoming clearer and larger in 2 to the hind margin, that at the margin, a long streak. Edge of wing greyish black. Hind wing, basal costal area pinkish to pinkish white, the costal cellule with three large rounded black spots and two at the base; cellule 7 with two rounded black spots; base of wing and along the inner margin black, the basal area with four rows of angular white spots to apex of cell, then follows a series of elongate silvery white marks on the inner fold and bases of 1a-1c, the bars becoming inverted loops in 3-4, then represented by inverted

angles shaded with crimson from 5 to subcosta; this row is succeeded by a parallel series of somewhat similar marks, whitish on the inner margin, then greyer, shaded with crimson, while on the submargin the marks are smaller, more quadrate and greyish, but those above the anal angle are larger, orange or orange-white, with a white triangular mark on the inner fold. The marginal border is maroon, breaking up into small silvery white spots above the anal angle where there is a large golden mark on the proximal side of the tail, which is black. Edge of wing black at hind angle, browner above.

**FEMALE.** Larger than the male, but shape similar; for wing length 45-47 mm. *Upperside.* Pattern very like that of male but paler reddish orange, though darker where it extends more into the cell and also encroaches more on the distal side, the edge being rounder; the black spots in and about the cell more obvious. Hind wing very similar to that of the male, but the white and orange spotting in the hind angle and around the anal angle, larger and more conspicuous. The marginal border is broader and redder.

For life history, *vide* van Someren, 1936.

**RANGE.** Except that extreme western examples tend to be small, there is little difference in colour and pattern throughout the range, which extends from Sierra Leone, Liberia, Ivory Coast to Angola; Cameroun, Central Africa Republic, Republic of the Congo (Kinshasa), northern Angola eastward to Uganda. Apparently not recorded from Katanga.

#### SYSTEMATIC LIST

##### *Charaxes nichetes* Grose-Smith

*Charaxes nichetes nichetes* Grose-Smith, 1883. Type locality: Cameroun.

Range: Cameroun, Central African Republic, Republic of Congo, Gabon, northern Angola, Kasai district, northern Congo (Kinshasa), Uganda, on Sesse Is, Lake Victoria.

*nichetes leoninus* Butler, 1895. Type locality: Zomba, Malawi.

Range: Malawi, Zambia, particularly east of Loangwe Valley.

*nichetes pantherinus* Rousseau-Decelle, 1954. Type locality: Kafakumba area, Katanga.

Range: south-east Congo (Kinshasa), Katanga.

##### *Charaxes zingha* (Stoll)

*Charaxes zingha* Stoll, 1780. Type locality: 'Africa' restricted to Sierra Leone.

Range: Sierra Leone, Liberia, Ivory Coast to Angola, Cameroun, Central African Republic, Republic of Congo (Kinshasa), northern Angola eastwards to Uganda.

#### 8. THE *CHARAXES CANDIOPE* COMPLEX, WITH ALLIED SPECIES

##### AND THOSE CONFINED TO MADAGASCAR

##### *Charaxes candiope* (Godart)

(Pls 13 & 14, figs 152-157; Map 8)

*Nymphalis candiope* Godart, 1824 : 353.

*Charaxes viridicostatus* Aurivillius, 1879 : 41.

**MALE.** Fore wing length 39–44 mm. Shape, apex bluntly pointed, outer margin gradually concave from 2–4, hind angle slightly projecting at 2; hind wing rounded at upper angle, but tapering to hind angle, with prominent anal angle; margin slightly dentate, with short tail at end of vein 4 and a long tail of vein 2, fused with the upper part of anal angle. *Upperside.* Fore wing, ground colour basal triangle ochre to ochre-yellow with a tinge of green at base accentuated by the green veins, especially that of the costa, shading to rufous-orange in discal zone; border beyond brownish black. Black bar at end of cell and adjacent bases of 5–6 and a small black spot at 3 and obscured black lines below in 2, faint markings present in sub-base and in cell showing through from underside; contiguous triangular black spots in sub-bases 5–6, sometimes joined by a black projection of the border in 4; the junction of the orange and black of border more or less uniform in width, the orange tapering toward the hind margin. The black border with bold orange spots in the postdiscal line, small and rounded at the costal end, gradually increasing in size to 1b, the mark in 1a, if present, a mere streak. Margin of wing with orange-tawny lunules from apex to hind angle, double in 1b. Hind wing, base of costal area greenish, shading distally to yellowish, rather sharply defined from the rufous orange at costa, the ground colour gradually shading rufous, paler on the inner fold; border of wing black, widest at upper angle, then tapering rapidly to region of tails, with a series of tawny orange spots, largest at upper angle, diminishing in size to lower tail; border with large tawny orange lunules darkening toward tails; the anal angle with olive ground outlined proximally in lilac and with two black spots. Upper tail short, sharply pointed, 2–4 mm, lower tail 8 mm, spatulate at end and upcurved. *Underside.* Fore wing, basal triangle pale creamy to ochreous, veins greenish, especially the costa, which has fine white transverse lines. Black lines in the cell clearly marked; brownish area beyond the cell crossed by black lines in sub-bases 6–3, and double line in sub-base 2. A dark brownish bar from costa to 1b separates the basal area from the paler earth-brown border, and is distally ordered in black, most pronounced in 1b & 2, setting off the ocelli in the postdiscal zone, which are obscure and divided in the costal area by a dark mark, but very pronounced in 1b and 2 where they are ochreous and off-set by black distally; the margin carries obscure pale spots, ochreous in colour in 1b, offset by dark edges.

The strength of the pattern is however variable. Hind wing even more variable. The basal costal area is greenish, shading to brownish over the cell and upper portion of the inner fold, the lower more ochreous brownish. The distal side of the basal green area is bordered by a strong dark brownish irregular bar, which runs through the sub-bases of 2 and 3, 4–6 and the cell (which retains a distinct white spot), offsetting an equally irregular creamy ochreous bar on its distal side, which extends from the costa to the end of the cell, then in diminishing irregularity to the inner fold. On the distal side of this pale bar is a series of large blackish lunules, outlined in pinkish white proximally, extending from the costa, in diminishing size, to the anal angle. The border of the wing is earthy brown with a series of ochreous spots in the submarginal line, most apparent at the upper angle, while the admarginal carries a series of olive lunules with pale ochreous distally, ending in the olive of the anal angle with the usual twin black spots. Edge of wing rufescent and extending onto the tails.

**FEMALE.** Larger than the male, fore wing length 45–55 mm. Shape very similar to male, but hind wing less attenuated, due to presence of a more developed tail on vein 4. *Upperside* ground colour and pattern very like that of male but usually slightly paler in ground colour and pattern bolder. Tails more developed, especially the upper, which may be equal in length to the lower, 12 mm, and more spatulate at ends. *Underside.* Highly variable, ranging from strongly patterned to a form in which the pattern is almost obliterated, especially on the hind wing.

For full account of life history, *vide* van Someren, 1928. The principal food plants are various species of *Croton* (Euphorbiaceae).

**RANGE.** Most of tropical Africa and extending to South Africa, but not apparently in the Cape Colony.



*Charaxes candiope thomasius* Staudinger & Schatz

(Pl. 14, fig. 158; Map 8)

*Charaxes candiope thomasius* Staudinger & Schatz, 1886 : 169.

MALE. Fore wing length 46–47 mm. Shape very falcate, outer margin strongly incised at 2–5, but apex blunt and 'squared-off'. *Upperside*. Fore wing, coloration, basal triangle of wing creamy ochreous, shading to more rufescent at line of junction at 1a–2, remainder of wing brownish black. Cell with a small blackish dot in subcosta at mid cell, from which there is a faint dark crescentic mark crossing the cell and a faint line present at end of cell showing through wing from underside. Veins greenish. Within the dark area of the wing there is a fairly distinct creamy spot beyond the end of the cell at the base of 5, and a more obscure series of rufous spots in the postdiscal line; admarginal with even more obscure rufous marks in 1b–2. Extreme edge with white internervular fringe. Hind wing, basal area greenish creamy in costal area, shading to more rufescent over cell and towards the inner fold where it becomes greyish, the whole merging into the brownish-black border, the line of junction clear-cut in the subcostal region, where there is a creamy bar in the upper discal line, and here, the pale area is rayed. The black border is immaculate, except for a series of obscure rufous marks in the submarginal line. The admarginal also has obscure rufous marks, most apparent at the upper angle. Margin of wing bluntly dentate with long tails on 4 and 2, 8 and 11 mm, spatulate at ends. *Underside*. Fore wing, base of wing more or less as upperside but dark lines in the cell distinct. Ground colour of distal portion of wing earthy brown crossed by a darker brown bar in the postdiscal line, extending from the costa to hind margin, where it tapers. A narrower dark line present in the submarginal running from the costa to the hind angle, these two bars obscurely connected by dark rays from the outer edge of the postdiscal bar; the border has indistinct dark rays and a pale mark at the hind angle. Hind wing ground colour as fore wing, but the basal area darker, with a few whitish zigzag lines, bordered in the costal area by a creamy bar extending from costa to upper part of cell, then continued as disjointed whitish marks to cross the inner fold; the postdiscal zone has a brown sinuous bar crossing from the costa to above the anal angle; the submarginal has a series of obscure whitish marks distally bordered by dark lunules with dark dots outwardly, double at the anal angle, where the ground colour is slightly olive; the admarginal slightly brownish, the tails edged with dark brown.

FEMALE. Larger than the male, fore wing length 50 mm. Shape similar. *Upperside*. Fore wing coloration almost identical, but spots beyond the cell more developed, as also the rufous spots in the postdiscal line. Hind wing, basal pale area more limited, more suffused with smoky grey-brown in lower triangle toward the inner fold; submarginal spots more distinct. *Underside*. Coloration and pattern as in the male, but pattern bolder.

RANGE. Confined to the island of São Thomé in the Gulf of Guinea.

*Charaxes candiope velox* Grant

(Pl. 24, figs 159 &amp; 160; Map 8)

*Charaxes candiope velox* Grant, 1899 : 10.

MALE. Fore wing length 39–41 mm. Shape of fore wing very similar to nominate race, but hind wing less attenuated toward anal angle because of the well developed upper tail at vein 4. *Upperside*. Fore wing, general scheme of coloration and pattern very similar to nominate *candiope*, but ground colour considerably darker, more rufescent, the basal area



with only a slight greenish tinge; the dark marks beyond the cell strong; the tawny orange spots in the black border larger and more distinct. Hind wing, the basal area is strongly rufescent, with only a slight pale area at the costa in discal line; the black border mainly limited to the upper angle, tapering rapidly to the upper tail; the submarginal tawny orange spots distinct but diminishing in size to between tails, represented at the anal angle by two black dots on an olive ground, the spots edged proximally with lilac and white. The marginal rufous lunules distinct above upper tail, shading to olive between the tails; tails long and thin, upper 9 mm in length, lower 10 mm. *Underside*. Fore wing, pattern essentially similar to that of nominate race, but ground colour, especially at base, duller greyish ochre, the lines in the cell stronger. The same comments apply to the hind wing where the basal area is generally darker; the postdiscal lunules more defined as also the submarginal pale marks which are buffish.

**FEMALE.** Larger than the male, fore wing length 43 mm. Shape as in the male, but apex of fore wing slightly more rounded. Ground colour rufescent as in the male but paler; pattern essentially similar but larger and paler, especially those in the submargin of the hind wing, which are almost buffish white. The underside is similar to that of the male.

**RANGE.** So far recorded only from the island of Sokotra, in the Gulf of Aden.

### *Charaxes cowani* Butler

(Pl. 15, figs 161-164; Map 8)

*Charaxes cowani* Butler, 1878 : 285.

**MALE.** Fore wing length 40-43 mm. Shape less falcate than *candiope* or *antamboulou*, outer margin less incised and thus straighter, and hind wing less prolonged toward anal angle, but outer margin strongly serrate and with long tails. *Upperside*. Fore wing, general coloration darker and richer than *candiope*, the basal area rufescent orange and rather restricted, the line of junction with the distal black border almost straight from just beyond the cell to the hind margin, the enclosed spots in the submarginal line strongly rufous orange; the spots beyond the cell less distinct and limited to one or two in 6-5 with indications of spots in 4-3. Hind wings, rufous orange area in base well defined from the black border at costal end, but less defined toward the inner fold where it is shaded with rufescent brown. The submarginal line of spots, generally reduced in size, extends from the costa to the hind angle, which is olive with two violet-blue spots accentuated distally in black. Margin strongly rufous. Margin serrate, tails long and thin, upper 8 mm, lower 10-11 mm. There is some variation in the size and distinctness of the orange spots on the upperside. *Underside*. Fore wing ground colour richer than in *antamboulou*, the basal area more rufescent; the black cross lines in the cell and sub-bases of 5-3 stronger; the dark discal zone with more obscured pale bars beyond the cell; the paler postdiscal row of spots distally edged with blackish lunules, less clear. The margin bluntly dentate. Hind wing, ground colour with a distinct purplish brown sheen; the discal pale bar less strong at costal end and fading out at end of cell; postdiscal dark line strong, accentuated with black and white lunules at costal end. Submarginal series of lilac lunules on an olive ground, accentuated with black and blue dots distally, strong in the region of tails; edge of wing rufous, strongly serrate with narrow white internervular fringe. The underside colour variable.

**FEMALE.** Larger than the male, fore wing length 47 mm. *Upperside*. Ground colour and pattern very similar to that of the male, but orange spots larger and bolder on both wings. Tails longer, upper tail 12 mm, lower 8 mm. *Underside*. Pattern and general coloration similar to that of the male, but bolder. It exhibits the same degree of variation.

**RANGE.** Madagascar.

*Charaxes antamboulou* Lucas

(Pl. 15, figs 165-168; Map 8)

*Charaxes antamboulou* Lucas, 1872 : n. 2.

This insect is closely related to *Ch. candiope* and might well be considered a race.

**MALE.** Fore wing length 40-45 mm. Shape very similar to *Charaxes candiope*, apex bluntly pointed; margin of wing bluntly dentate. *Upperside.* Fore wing, general colour and pattern very similar to *candiope* but more in contrast, the basal area richer orange-ochreous, more sharply defined from the blacker distal portion of the wing, the enclosed spots paler, less rufescent and showing up clearly; the margin of the wing with reduced rufous spots. Veins at base of wing greenish. Hind wing basal area much as in *candiope* but its outer border less rufescent and more sharply defined from the blacker border, where the submarginal spots are smaller or even obsolete; the marginal border narrower; margin more dentate, tails longer and thinner, upper 7-8 mm, lower 10 mm. *Underside.* Fore wing, general colour and pattern very similar to that of *candiope*, but stronger and in more contrast; the basal pale area more defined from the darker distal portion of the wing; the discal pale spots clearer, so also the submarginal pale spots accentuated by the darker line of admarginal marks. Hind wing, ground colour generally darker but the pale marks at sub-base and in discal line, more in contrast; the postdiscal sinuous dark line stronger, as also the pale lunules in the submarginal row. The pattern is however rather variable.

**FEMALE.** Larger than the male, fore wing length 44-47 mm. *Upperside.* General colour and pattern similar to the male and differing from *candiope* in a similar manner. Fore wing, the basal area is paler, more creamy ochreous, the line of junction dark, almost black, of the distal portion of the wing, strongly demarcated. The dark area embracing the area beyond the cell, so that the two pale spots beyond are reduced in size but are distinct; the postdiscal row of spots paler and in strong contrast; the margin of the wing with reduced lunules. Hind wing colour and pattern as in the male. *Underside.* Somewhat variable, generally darker in ground colour, but pattern in stronger contrast.

**RANGE.** Limited to Madagascar.

*Charaxes analava* Ward

(Pl. 16, figs 169 &amp; 170; Map 8)

*Charaxes analava* Ward, 1872 : 3.

**MALE.** Fore wing length 43-45 mm. Fore wing shape, costa rather curved, apex rather falcate but bluntly pointed; outer margin incised and bluntly dentate; hind angle projecting slightly at 1b. *Upperside.* Fore wing, basal triangle creamy ochreous shaded with greenish toward base, extends from just short of the cell end to within 8-10 mm of the hind angle, is sharply defined from the blackish distal portion of the wing, the line of junction irregular. An orange-ochreous rounded or oval spot present in sub-base 6, sometimes with a smaller spot below in 5; postdiscal spots, paler creamy ochre, rounded and distinct, though the spots in 4 and 5 may be small. Margin of wing with small pale internervular marks between the denticles. Hind wing, mostly creamy ochreous sharply defined from the black border which is widest at the upper angle, then tapers to 4 at upper tail. There may be an intrusion of the black into area 3. The margin of the wing is strongly serrate at end of veins, with strongly developed tails at ends of veins 2, 3, 4, upper tail 10 mm, mid tail 5 mm, lower tail 8 mm. Admargin with a line of blackish lunules margined with ochreous proximally, with some darker shading internally. Margin of anal angle with two black spots. *Underside.* Fore wing, with a strongly 'marbled' pattern. Cell dark brown, crossed by a silvery white line with

bifid costal end just short of mid point, followed by a broader silvery bar, outlined in black towards its end, with an extension into the sub-base of 3 and base of 4, which are tinged with brownish. These bars are contiguous with the pale area on the hind margin of the wing, which is creamy. The disc of the wing is dark brownish, widest at the costa, with irregular sides, tapering towards, but only just reaching, the hind margin short of the hind angle. There is a whitish line edged distally in black, crossing 5 and 6 below the costa. On the distal border of this dark area are whitish lunules, on the distal side of which are obscure ocelli with dark central dots, largest in the subapex but diminishing in size toward the hind margin. The marginal border of the wing is greyish brown with a narrow white fringe in the interspaces. The hind wing presents an even more complicated pattern. The base of the wing is dark brownish, more or less parallel-sided in its upper portion, but tapering and divided into two at the inner fold, the outer arm angled and crossing 1b and reaches the inner fold. Beyond, the discal zone is greyish brown, sinuous in outline, extending from the costa to above the anal angle. This band in turn is followed by a dark brown bar, narrow at its costal end, widening abruptly at the end of cell, then tapering toward the anal angle. This dark bar is strongly accentuated by silvery white outwardly. The postdiscal zone is brownish grey, paler opposite the tails, with a series of indistinct ocelli, double at the anal angle, greyish in colour, freckled in black and outlined in pale ochre, the ocellus at the upper angle at costa large and conspicuous with black centre. The submargin carries a series of lunules, dull ochreous in colour and accented distally in black, which extends up the serrations and the tails; edge with narrow white fringe in interspaces.

**FEMALE.** Larger than the male, fore wing length 50 mm. Margins of both wings as dentate and serrate as in the male. *Upperside.* General coloration and pattern as in the male, but the fore wing creamy spots larger; on the hind wing, the two postdiscal dark spots are more defined and larger. *Underside.* Similar to that of the male though bolder, on a paler ground colour.

**RANGE.** Madagascar.

### *Charaxes phraortes* Doubleday

(Pl. 16, figs 171 & 172; Map 8)

*Charaxes phraortes* Doubleday, 1847a : 65; 1847b : 60.

The male of this distinct species bears a superficial resemblance to the male of *Charaxes andranodorus*, the pattern being very similar, but the orange ground colour is paler. The undersides are, however, quite different.

**MALE.** Fore wing length 45 mm. Fore wing, apex bluntly pointed, outer margin only slightly incurved at 2-4; hind angle rounded. *Upperside.* Fore wing, ground colour tawny orange from base to the postdiscal zone, which is orange; outer border black. Cell with three strong, black, rather quadrate spots, in sub-base, mid, and at end; more elongate black spots present in the sub-bases of 7-5, 3-2, which has two spots, and double smaller spots in 1b. The margin of the wing with conspicuous orange, rather quadrate spots, double in 1b and extending to the apex. Hind wing, basal area tawny rufous shading to orange in the disc, which again shades to tawny orange on the inner fold, which is slightly edged with white and has a white spot above the anal angle. There are two small black spots in the costal area of the discal orange bar; border of wing broadly black, widest in region of cell end; marginal border with very distinct orange lunules with points directed into the strong serrations of the edge, which is black with narrow white fringe. Tails on 4 and 2, long, slender and pointed, upper 10 mm, lower 12 mm. Anal angle olive at edge, with two lilac spots. *Underside.* Fore wing, ground colour ferruginous chestnut with a strong mosaic of black marks strongly outlined in satiny white; base of costa white; cell with four black, silver-bordered spots and

two longer bars in subapex; similar marks in sub-bases of 3-2, double in latter, and a large black mark in base of 1b. The orange bar of above is here represented by pale pinkish white marks large in 1b and diminishing in size, bordered distally in orange; this is followed by a complete row of white crescentic loops with contained black, small at costa, increasing in size to 1b where the mark is largely black and represented in 1a by a black streak which runs to the hind angle; the border is orange-tawny with white linear marks outlined in black along the veins thus placed between each of the more internal lunules; the edge between the border marks white. Hind wing, ground colour ferruginous chestnut with a strong pattern of black marks boldly outlined in white; cell with two such marks, followed by longer marks in 2-4, and a long mark at end of cell; the inner fold with three elongate marks; the discal zone with an irregularly edged white bar consisting of three quadrate marks at costal end, followed by an angular mark at end of cell and a more elongate triangle continued toward the hind angle and outlined in black. In the submargin is a row of silvery white quadrate marks distally bordered with black and proximally with angled marks with brownish within, most marked at upper end and becoming linear towards the hind angle where the marks are orange; the anal angle olive with two large black spots with lilac dots; border of wing tawny orange with white projections going into the strong serrations, which are black-edged and white-fringed.

**FEMALE.** Larger than the male, fore wing length 55 mm. Shape very similar. *Upperside.* Fore wing, ground colour paler ferruginous; pattern as in the male but bolder, the black areas more extended, those of the discal zone contiguous and reaching the hind border; the black borders of both wings broader; tails on hind wing longer. *Underside.* General pattern as in the male, but bolder.

**RANGE.** Madagascar.

### *Charaxes andranodorus* Mabille

(Pl. 16, figs 173, 174; Map 8)

*Charaxes andranodorus* Mabille, 1884 : 184.

*Charaxes cinadon* Butler, 1880a (*nec* Hewitson, 1870) : 335.

*Charaxes zoippus* Mabille, 1884 : 185.

**MALE.** Fore wing length 45-47 mm. Shape, costa slightly curved, apex bluntly pointed, outer margin only slightly incised at 3-4; edge bluntly dentate. *Upperside.* Fore wing, ground colour rufous orange, darker toward the base, brighter tawny orange in the disco-postdiscal zone; border black. Cell with three black, somewhat triangular marks of increasing size, one at mid-costa, one at subapex and the largest at end of cell; somewhat triangular black marks in sub-bases 6-5, 3-1b, that in 1b double and smaller, mark in 3 often contiguous with mark at end of cell. Irregular black marks beyond in sub-bases 7-6, with narrower spot in 4 dividing the sub-apical orange spots from the orange in the postdiscal line. Border of wing black with distinct rufous orange spots on margin. Hind wing, base of wing darker rufescent chestnut, shading to buffish rufous on the inner fold; discal band brighter rufous orange, palest at costa, where it is well defined, but merging more with the rufous of the inner fold, which has a white line on its lower edge above the hind angle. Border of wing black, margin strongly serrate with a few orange lunules at upper angle; anal angle with lilac spot and ochreous line below. Tails thin and sharply pointed, upper 6 mm, lower 9 mm, with shorter tails on 3, 5-7. *Underside.* Fore wing, costal and basal area rufous chestnut, the subcostal cell area and disc of wing crossed by bold black bars outlined in white, those in bases of 1b-3 bordering on the bold silvery white line, which crosses the postdiscal zone of the wing, widening in 1b where it is bordered with orange. The border of the wing is rufous chestnut, carrying a series of silvery white spots of decreasing size from sub-apex to 1b, increasingly edged with black proximally at the expense of the white; margin with linear white marks outlined in black along the veins in intermediate position to the submarginal

spots. Hind wing, ground colour rufous chestnut, the base of the wing crossed by linked white marks with black centres, similar marks also present at the base of the wing. The inner fold with bold black and white lines linked at base above the hind angle and forming the upper arm of a white triangle above the anal angle. The disc of the wing is crossed by a bold silvery bar which curves slightly from costa to hind angle, with bold black marks on lower distal and proximal sides where the ground colour becomes orange above the anal angle; border with irregular silvery white band, outlined in black, extending from costa to above anal angle; margin with strongly marked orange border, distally accentuated by sharply pointed silvery angles, which run into the serrations of the wing, which are black edged. The serrations are thus accentuated.

**FEMALE.** Larger than the male, fore wing length 54-56 mm. Shape very similar. *Upperside.* Fore wing, ground colour brighter and paler than the male, but pattern essentially similar, but black marks showing up more clearly. On the hind wing, the discal orange band is more defined distally and extends further into the inner fold. The margin of the wing is strongly serrate so that each vein carries a 'tail'. The marginal border is more conspicuously orange; the bluish spots at anal angle more in evidence. *Underside.* Fore wing, pattern very similar to that of male, but the silvery white more exaggerated, especially that of the submarginal zone, including the white lunules and the white linear marks at the ends of the veins. Hind wing, pattern is also similar to that of the male but stronger, particularly the submarginal white irregular band, so also are the white angular marks at the bases of each serration on the border. The tails are long and pointed and slender, upper 13 mm, lower 10 mm; the intermediate tail on 3 is 8 mm.

**RANGE.** Limited to Madagascar.

#### SYSTEMATIC LIST

##### *Charaxes candiope* (Godart)

*Charaxes candiope candiope* (Godart, 1824). Type locality: Restricted to South Africa, Damaraland.

Range: Most of tropical Africa to South Africa but excluding Cape Colony.

*candiope thomasius* Staudinger, 1886. Type locality: Island of São Tomé, Gulf of Guinea.

Range: Restricted to type locality.

*candiope velox* Grant, 1899. Type locality: Sokotra, Gulf of Aden.

Range: Restricted to type locality.

##### *Charaxes cowani* Butler

*Charaxes cowani* Butler, 1878. Type locality: Madagascar.

Range: Confined to Madagascar.

##### *Charaxes antamboulou* Lucas

*Charaxes antamboulou* Lucas, 1872. Type locality: Madagascar.

Range: Confined to Madagascar.

##### *Charaxes analava* Ward

*Charaxes analava* Ward, 1872. Type locality: Madagascar.

Range: Confined to Madagascar.

*Charaxes phraortes* Doubleday

*Charaxes phraortes* Doubleday, 1847. Type locality: Madagascar.  
Range: Confined to Madagascar.

*Charaxes andranodorus* Mabille

*Charaxes andranodorus* Mabille, 1884. Type locality: Madagascar.  
Range: Confined to Madagascar.

9. *CHARAXES VARANES* CRAMER AND ITS SUBSPECIES*Charaxes varanes* (Cramer)

As is frequently the case in a species with a very wide distribution in Africa, from west to east and to the Cape, with food requirements equally well distributed, we find that *Charaxes varanes* does not divide up into well defined races. The extremes are easily recognized, but the representatives in eastern Africa are variable, but tending more toward the western race than the southern; in fact, the southern nominate race is restricted to South Africa.

*Charaxes varanes varanes* (Cramer)

(Pl. 17, fig. 175; Map 9)

*Papilio Eques Achivus varanes* Cramer, 1764 : 45.

*Philognoma varanes* Wallengren, 1857 : 28.

*Palla varanes* Kirby, 1871 : 274.

*Charaxes varanes austrinus* Rothschild, 1900 : 357. = variation. **Stat. n.**

**MALE.** Fore wing length 40–45 mm. Shape, apex pointed, outer margin concave, hind angle projecting slightly but rounded. Hind wing, margin slightly bluntly dentate with long, slightly spatulate tail on vein 4. *Upperside.* Fore wing, basal area to end of cell yellowish, shading to orange over discal zone; border of wing beyond darker tawny chestnut. A dark line present at end of cell contiguous with a spot at base of 4, and dark spots in sub-bases 2–3; the junction of the orange with the dark band accentuated by the rows of rufous orange spots in postdiscal and submarginal lines. Hind wing basal area bluish white from mid-costal area to toward the hind angle; inner fold buffish. The white area well defined from the more tawny orange border, especially towards the costa; postdiscal line with dark spots enhancing the series of tawny orange spots in the submarginal zone which are distally bordered by dark lunules with pale spots on the margin. Tail on vein 4, 6 mm in length with rounded or spatulate end. *Underside.* Fore wing, ground colour variable from tawny buff to more rufous, with a slightly darker band on the proximal side of a dark sinuous line extending from the costa to hind margin and continuing through the hind wing. On the distal side of the fore wing line is a series of darker spots in the submarginal zone; the basal area of the wing with fine interrupted dark lines. Hind wing, basal area with similar fine lines up to the dark cross line which is distally edged with silvery buff, beyond which are satiny patches, followed by rather obscure ocelli extending from the anal angle to the costa, but that at costa very distinct, forming a very conspicuous ocellus; admarginal with small triangular dark spots.



**FEMALE.** Larger than the male, fore wing length 43–46 mm. Shape very similar to that of male, but apex of fore wing slightly less pointed. *Upperside.* General coloration and pattern similar to that of male, but pale area of fore wing tending to whitish on the hind border. *Underside.* Ground colour variable, almost uniform tawny ochreous to tawny olive, or may be irrorated with fine blackish speckling with some satiny patches on the distal portion of the wings. The ocelli on the hind wing well developed; all forms with very distinct dark line crossing both wings.

**RANGE.** The nominate race appears to be restricted to South Africa, but intergrades with the northern aggregate in Rhodesia and the northern half of Mozambique.

### *Charaxes varanes vologeses* (Mabille)

(Pl. 17, figs 176–181; Map 9)

*Pallâ vologeses* Mabille, 1876 : 280.

*Charaxes varanes* f. *brachycauda* Le Cerf, 1923 : 367.

**MALE.** Fore wing length 35–45 mm. (Western examples tend to be smaller on average.) Shape, as in nominate race. *Upperside.* Fore wing, general coloration and pattern very similar to typical *varanes*, but basal area strongly white, extending from mid hind margin and base of cell, well defined from the orange discal zone in the former but merging toward the end of the cell; distal portion of wing rufous chestnut; dark line at end of cell and dark spots in bases 2–4; distal portion of wing rufous chestnut; a series of dark spots in discal line; the border with rows of tawny orange spots in postdiscal and submarginal lines extending from costa to 1b, separated by obscure dark spots; edge of wing with very narrow white in interspaces. Hind wing, basal area bluish white merging to buffish grey on inner fold above anal angle; the white area clearly defined from the rufous-chestnut border in upper half, but less defined toward the hind angle. Border with a series of dark spots, large and defined at upper angle but becoming obscured toward the hind angle; admarginal with dark lunate or triangular marks and between the two rows a series of tawny orange linear marks, clearest at upper angle; edge narrowly pale buffish. Tail at vein 4 long and spatulate, 8 mm. Anal angle with black line edged white distally. There is sometimes a decided projection at end of vein 2. *Underside.* Fore wing, ground colour rather variable, basal area up to the dark cross line may be ochreous, tawny ochreous, rufescent greyish or clayish; the fore wing sometimes with a darker triangular patch on proximal side of the dark line; the pattern in the basal area often obscured but the dark zigzag fine lines, often strong against the paler ground. The dark line in the fore wing extends from the costa to 1b, and on its distal side are obscure dark lunules flanked by a series of rather obscure dark-centred ocelli in the submarginal zone, each with a dark linear mark directed toward the margin; edge of wing rather brownish. In strongly marked specimens there may be a distinct satiny line distal to the dark bar. Hind wing, basal area ochreous as fore wing, or may be suffused over, obliterating the fine dark lines, or this area may have a slight purplish brown tone. The dark bar running from the costa to above the hind angle is almost straight, it may be strong and defined or with a satiny buff edge distally, with some satiny areas beyond in which dark ocelli are situated, that at upper border strongly marked, that toward the hind angle more elongate, with a pale patch in 3; anal angle with a double light mark. The margin has a series of obscure triangular pale marks or lunules on a greenish ground with black dots distally; this row is often obliterated except for the black dots. Rothschild attempted to divide specimens into groups on the character of the undersides, but they intergrade.

**FEMALE.** Very similar to the male but larger, fore wing length 45–51 mm. Shape similar.



*Upperside.* Fore wing, extent of the white greater, there being less orange suffusion distally except toward the end of the cell, where the dark marks are conspicuous. The dark rufous chestnut border strong, and the tawny orange spots usually well defined. The hind wing colour and pattern differs in much the same way, the tawny orange spots may be distinct or obscured. The tail at vein 4 is more robust, 8–10 mm in length. *Underside.* As or even more variable than that of the male. Fore wing, ground colour may be pale ochreous or tawny, or even rufescent; the thin dark zigzag lines in the basal portion distinct on a pale ground, or obscured on a darker base. Similar comments apply to the pattern beyond the dark cross line, which is always well indicated as a single line or double line terminating in a dark patch in the hind angle at 1b. Hind wing, ground colour similar to that of fore wing, equally variable; the conspicuous dark bar usually strong and extending to above the hind angle where it joins at an angle with the series of crescentic dark marks, which become ocelli in the postdiscal line, especially strongly marked at the upper angle, forming a conspicuous ocellus. The marginal lunules may be strong or weak. These variations can be noted in specimens from one locality, or bred in a single family.

The above descriptions are based on specimens from Uganda and Kenya. One, however, obtains the occasional specimen with strongly yellow suffusion to the base of the fore wing, and specimens from the thorn-bush hinterland of the coastal belt closely resemble the nominate southern race. In such examples, the fore wing basal area is mainly yellow with only a trace of white on the bases of 1a–1b; the dark border is strongly rufescent, not bright chestnut, thus the orange spotting is less in contrast. On the hind wing the white area is reduced and the ground colour of the border less dark so that the dark postdiscal spots are more conspicuous and the submarginal orange spots connecting with the marginal triangles, are larger. The underside also differs in that the ground colour is more rufescent, the fore wing lacking the dark triangular patch in the mid area, and the dark cross bars of both wings may be faint. Western examples are on average smaller and are more strongly coloured, but the area of intergrading is considerable.

BIOLOGICAL NOTE. For an account of the life history *vide* Rothschild (1900 : 357–358 [extract from Trimen]) and van Someren, 1929 : 112.

RANGE. Eastern Africa from Rhodesia northward to Congo (Kinshasa) and Ethiopia; also in Angola, the Central African Republic westward to Nigeria, Sierra Leone and Guinea.

### *Charaxes varanes bertrami* Riley

(Pl. 18, figs 182 & 183; Map 9)

*Charaxes varanes bertrami* Riley, 1931 : 279.

MALE. A small dark race; fore wing length 36 mm; apex pointed, falcate; margin slightly dentate; hind wing rather rounded, margin dentate; tail at end of vein 4, 5 mm in length, spatulate. *Upperside.* Fore wing, differs from other races in having the basal area tawny orange, the distal portion of the wing chestnut-brown with two tawny orange spots beyond the end of the cell and indications of light marks along the junction of the two ground colours; two spots at bases of 5 & 6, and tawny orange spots in the postdiscal line and on the submarginal zone; edge with narrow whitish internervular fringe. Hind wing, basal area, including upper part of inner fold, whitish, widest at costa but angled and reduced at cell and merging with the rusty chestnut of the broad border which, in the postdiscal line, has a series of dark spots adjacent to the orange spots on the submargin; margin with obscured dark lunules; fringe white in interspaces. *Underside.* Fore wing, basal area buffish ochreous, with irregular dark

lines; discal area darker rusty on proximal side of dark bar; submarginal zone with dark spots flanked on either side by tawny orange lunules. Hind wing ground colour as fore wing; wing crossed by a dark line from costa to above hind angle; a series of ocelli, well marked at costa, present in the postdiscal zone, becoming lunules at the hind angle, where they join the dark line at an angle. Submargin with darker triangular marks. Surface of both wings often freckled with dark scales. The ocellus at upper angle hind wing well marked.

FEMALE. No specimen available.

RANGE. Southern Arabia.

*Charaxes varanes defulvata* Joicey & Talbot

(Pl. 18, fig. 184; Map 9)

*Charaxes varanes defulvata* Joicey & Talbot, 1926 : 22.

MALE. *Upperside*. In this very distinctive race the basal areas of both wings are in strong contrast to the dark distal portions of the wings; the orange spots are obscured, especially those of the submarginal series of the fore wing and most of the spots in the hind wing. *Underside*. The dark triangular patch in the fore wing, flanked by a pale line distally, is well marked; the dark line on the hind wing is strongly margined with whitish distally; the postdiscal and submarginal ocelli are faint except for that at the costa at upper angle, forming a conspicuous ocellus. Those at hind angle well marked. The tail is shortish but robust, 6 mm.

FEMALE. No specimen available.

RANGE. São Tomé, Gulf of Guinea.

SYSTEMATIC LIST

*Charaxes varanes* (Cramer)

*Charaxes varanes varanes* (Cramer, 1764). Type locality: Coromandel & Amboina.

*Patria falsa*.

Range: South Africa; Cape Colony, Natal, Zululand, Transvaal, Kalahari.

*varanes vologeses* (Mabille, 1876). Type locality: Congo and Landana.

Range: Western Africa from Senegambia to Sierra Leone to Cameroun, Congo (Kinshasa), Gabon, Angola, Rhodesia, Zambia, Malawi, Mozambique, Tanzania, Kenya, Uganda, southern Sudan, and southern Ethiopia.

*varanes bertramii* Riley, 1931. Type locality: south-east Arabia, Quara Mts.

Range: central southern and south-east Arabia.

*varanes defulvata* Joicey & Talbot, 1926. Type locality: São Tomé, Gulf of Guinea.

Range: Confined to type locality.

10. *CHARAXES LYDIAE* HOLLAND*Charaxes lydiae* Holland

(Pl. 18, figs 191 &amp; 192 [For map, see Map 1, Part 8])

*Charaxes lydiae* Holland, 1917 : 18.*Charaxes lydiae* Holland; Howarth, 1969 : 38.

This very striking species appears to be very rare in collections. It was described from a single female taken in Cameroun in 1900. The type remained unique until 1963, when the late T. H. E. Jackson's African collector secured a male and a female at Ndouba, Kelle district, Republic of Congo.

I take the liberty of quoting the description given by Mr Howarth, op. cit.

**MALE.** Length of fore wing 45 mm approximately, apices of both wings slightly worn. *Upperside.* The forewings are black with large white areas and spots, and the hind wings are white with white-spotted margin. In the terminal portions of the first five interspaces basad of the black border of each wing is a large and conspicuous yellow-ochre area. The black basal lines of the underside are distinctly visible on the upper surface against the white colour. *Underside.* Similar to the female except that the black spot at the base of space 2 is conspicuously larger than in the type and is confluent with the serpentine marking in the cell. The dark markings in the cell are washed with brownish-ochre.'

**FEMALE.** Fore wing length 55 mm. Apex of wing rather rounded, the outer margin only very slightly concave at 5-4. Base of cell ochreous in the lower half, carrying three black marks, the sub-basal line slightly angled; two contiguous rounded spots present in the sub-apex; the apex with an 'S' mark. The distal half of the wing is best described as black, ornamented with white spots, including the hind angle. There is an ovoid white spot beyond the end of the cell, and a triangular mark at base of 3; a series of bold white marks cross the wing from sub-costa to hind angle, the first mark is a streak followed by triangular marks with distal ends obliquely sloped, followed by less clear-cut elongate mark in 4; a longer cylindrical mark in 5 with sloping ends; an ovoid mark in 2 followed by conjoined smaller marks in 1b. The base of the wing with a large triangular white area which covers the basal half of 2, the greater part of 1b and most of 1a. The outer ends are pointed and the bases have some ochreous scaling. The hind wing is mostly white with a diffuse area of yellowish ochre scaling in the lower quarter and anal angle. The border is strongly black, carrying a series of sub-marginal ovoid white spots, commencing at the upper angle and extending to the anal angle where the spots are double; the margin carries a series of triangular white marks, those in the region of the tails divided by black veins. The base of the wing is crossed by diffuse vertical black lines which are in fact the black lines of the underside showing through. *Underside.* This is an exact replica of the upperside pattern, especially so in the fore wing, but there is a distinct black spot at the base of 2 which is only slightly indicated on the upper side. On the hind wing the basal vertical lines are strong; the double outer line also well marked and the black scaling extends down vein 2, the other veins also clearly indicated. The spotting on the black border is similar to that above, but in addition there is a series of whitish lunules within the black at its line of junction. The suffusion of yellowish scales is present as above, but not so strong. The margin of the wing is bluntly serrate, and a strong tail is present at the end of vein 4, unfortunately with its tip missing; another tail, also broken, at end of vein 2.

This specimen is in the Jackson Collection, but will be deposited in the British Museum (Natural History).

**RANGE.** At present known only from the Lolodorf area of Cameroun and the

Kelle district of adjoining Republic of Congo (Brazzaville). (Moyen Congo.) [See Map I, Part 8.]

GENERAL COMMENTS. The peculiar shape of this species is suggestive that it links *Charaxes* with *Euxanthe*. Unfortunately, nothing is known of its early stages, which might give an indication as to its relationship.

SUPPLEMENTARY NOTES ON SPECIES DEALT WITH IN EARLIER PARTS

*Charaxes baumanni* Rogenhofer.

*Charaxes baumanni bamptoni* subsp. n.

(Pl. 18, figs 185 & 186)

I have recently had the opportunity to examine a small series of this species from Mt Kulal, an isolated forested mountain to the south-east of Lake Rudolf. The specimens present features which distinguish them from other described races previously dealt with in Part VII of these Revisional Notes.

MALE. Fore wing length 25–27 mm. *Upperside*. Fore wing, ground colour blue-black; the blue spots limited to a streak on hind margin in 1a, and a crescentic mark in space above, and a faint trace of a spot in 2; and a trace of a spot in 6. Hind wing, ground colour blue-black, crossed by a bluish white discal band pointed at both ends, more bluish on distal edge. Row of submarginal spots complete, but more distinct opposite tails; margined black. Tails longer than usual, upper 5–6 mm, lower 6 mm. *Underside*. More uniform brownish than in other races; the fore wing crossed by a fine white discal line, margined with black proximally. Basal triangle with the usual black dots and fine lines; some shading in post-discal zone. Hind wing ground colour as fore wing, crossed by a fine white discal line edged black proximally. Post-discal zone slightly reddish, fading out opposite tails; submarginal row of spots complete, edged black distally; admarginal reddish to upper tail then olive to anal lobe, which has the usual two black spots. Tails edged black.

FEMALE. Larger than other races. Fore wing length 29–30 mm. Outer margin slightly more incised in 3–4; hind angle less rounded. *Upperside*. Fore wing, ground colour less intense black than in males. White discal band curved proximally, represented in 4–6 by three spots, upper one largest; mark in 3 triangular, quadrate in 1b–2 with a long streak in 1a. The whole band narrower than in other races. The subapical white spots small and not connected with discal band. Hind wing, ground colour as fore wing; disc crossed by a narrow white band almost equal in width throughout but tapering toward hind angle. Submarginal white dots complete and distinct; admarginal reddish to upper tail, then olive. Tails long, upper 7 mm, lower 6 mm, longer than in other races. *Underside*. More greyish than in male, with darker shading on proximal side of white discal band. The white subapical spots set at an angle and reaching the discal band. Margin dark. Hind wing, ground colour as fore wing and crossed by angled white band. Distal part wing darker than in other races, carrying contiguous lunate dark line in post-discal zone, submarginal lunate white dots edged black distinct. Admarginal slightly reddish to upper tail.

Holotype male. KENYA; Northern Frontier District, Mt Kulal, 6,200 ft, 6.iii.1972 (*Ivan Bampton*). In British Museum (Natural History).

Allotype female. Same data as holotype. In British Museum (Natural History).

Paratypes, 1 ♂, 3 ♀: Same data as holotype (in Bampton coll.).

*Charaxes martini* van Someren

(Pl. 18, figs 187, 188)

*Charaxes martini* van Someren, 1966 : 96.

When I described this species in Part III from a few males, the female was unknown. Since then two females have been taken in the type locality at 300 feet on Mt Mlanje, Malawi. The specimen taken by P. T. Martin is in sufficiently good condition on which to base a description.

**FEMALE.** Fore wing length 36 mm; apex somewhat pointed but outer margin only slightly incurved at 3-4. *Upperside.* Ground colour black with very slight greenish tinge toward base especially in the cell. Discal row of pale creamy spots interrupted in 4, subcostal spot elongate, followed by a smaller spot in 5, the spots from 3 to hind margin of increasing size, that on the hind margin elongate and contiguous with the series of postdiscal creamy spots in 1b, the spots in 2-4 of equal size and at a slight angle with the subapical spots in 5-7. Extreme edge of wing with very slight white internervular fringe. Hind wing ground colour black; disc of wing crossed by a creamy bar, widest at the costa, 6 mm, tapering slightly to 2, inner border slightly tinged with greenish due to the longish hair-like scales toward the inner fold, the outer border more tinged with greenish grey; a series of linear white marks on submargin, followed by maroon lunules from 5 to upper tail, the lunules becoming greenish at anal angle; extreme edge black. Unfortunately, the tails are missing except that on vein 4 which is 6 mm long, black with white median line. *Underside.* Fore wing ground colour silvery grey; the cell with a black spot at base and two spots, one above the other, beyond; a wavy line present at about mid point and a thinner line toward end. A dark bar crosses the wing in the discal line, the margins accentuated by black, so that this bar accentuates the inner edge of the white bar above, which is here somewhat enlarged and distally bordered by a darker line separating the discal white from the postdiscal series of pale dyslegnic spots in its upper part, but bordered with brownish in the curve of the wing, in its lower portion accentuated by black lunate marks in 1b-2 and by black tornal 'eye-spots', double in 1b. Hind wing ground colour as fore wing, but base with a brownish grey 'V', base toward costa and enclosing a whitish line, defined from the whitish inner fold and more so on its distal side by the white cross bar in discal zone, which is accentuated proximally with blackish lines and distally by a series of greenish grey lunules outlined in black proximally and shaded with chestnut distally; the submargin silvery grey, distally bordered by reddish lunules above the tail and more greenish at anal angle; margin white finely edged with black.

Neallotype female. MALAWI: Milosa Stream, Mt Mlanje, 3000 ft, 17.x.68 (*P. T. Martin*).

A second female was subsequently caught by Dr McCleery at the same spot and, as it was very damaged, it was caged with possible food plants, but refused to lay.

On the upperside, this female is somewhat reminiscent of the white-barred female of *Ch. ethalion*, but the series of postdiscal spots is more creamy and less angled at 3-4. The underside is rather similar to *Ch. contrarius* Weymer, which does not occur in southern Malawi.

*Charaxes lactinctus* Karsch

(Pl. 18, figs 189 &amp; 190)

*Charaxes lactinctus ungemachi* Le Cerf, 1927 : 144.

When this subspecies from Ethiopia was dealt with in these Revisional Notes

(Part VIII, p. 235), only photographs of a ♀ paratype were available. Through the kindness of Dr P. Viette, of the Museum National d'Histoire Naturelle, Paris, it is now possible to illustrate the holotype male and allotype female.

## ACKNOWLEDGMENTS

I wish to acknowledge my indebtedness to all my correspondents for help in supplying material and information, and my thanks to members of the Department of Entomology, British Museum (Natural History), especially Messrs T. G. Howarth and D. E. Kimmins for preparing the typescript for publication, and Mr R. L. Smiles for preparing the Bibliography.

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